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CULTURAL RESOURCES SURVEY OF FALL RIVER LAKE, KANSAS. (U)
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CULTURAL RESOURCES SURVEY OF
FALL RIVER LAKE, KANSAS

by

David G. Elcock

and

Patricia J. O'Brien

Department of Sociology, Anthropology
and Social Work

Kansas State University

Submitted to:

U.S. Army Corps of Engineers
Tulsa District
In Accordance With:

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by
David G. Elcock
and
Patricia J. O'Brien

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ABSTRACT

From January 1979 until July 1979 an Executive Order 11593 Survey was conducted in the Fall River Reservoir Area. The data has been compiled on 86 prehistoric and 75 historic sites, as well as the pre-1947 bridging. The settlement patterns have been delineated especially for the Archaic to the Great Bend Aspect Components and that data was compared to similar data gathered in the Smithville Lake Area of North-western Missouri. Finally, recommendations for the future protection of these resources are presented.

TABLE OF CONTENTS

	page
I. INTRODUCTION	1
II. ENVIRONMENTAL SETTING	2
III. PROBLEM	5
IV. ARCHAEOLOGICAL BACKGROUND	10
Paleo-Indian	11
Archaic	14
Early Ceramic	17
Middle Ceramic	21
Late Ceramic	22
Historic	22
Euro-American	23
V. SURVEY	26
VI. PREHISTORIC CULTURAL RESOURCES IN FALL RIVER LAKE . . .	32
Pre-1979 Survey Work	34
E. O. 11593 Site Survey	37
14GR630 Testing	72
Shoreline Survey	77
Isolated Finds	77
VII. HISTORIC CULTURAL RESOURCES IN FALL RIVER LAKE	79
Archaeological Sites	84
Pre-1947 Contemporary Structures	94

VIII. SETTLEMENT PATTERNS	107
Discussion	124
IX. CONCLUSIONS	130
X. EVALUATIONS AND RECOMMENDATIONS	137
XI. ACKNOWLEDGEMENTS	149
XII. REFERENCES CITED	150
XIII. VITAE	155
D. Elcock	155
P. O'Brien	157

LIST OF FIGURES

	page
Fig. 1. Map showing the eastern half of the Central Plains with Smithville and Fall River Lakes	8
Fig. 2. Fall River Lake artifacts: Paleo-Indian and Archaic	13
Fig. 3. Fall River Lake artifacts: Early to Late Ceramic.	18
Fig. 4. Surveyed and unsurveyed land in Fall River Lake	27
Fig. 5. Map showing Ground Cover Character of Fall River Lake Tracts	28
Fig. 6. Map showing Visibility Character of Fall River Lake Tracts	29
Fig. 7. Map of Prehistoric Sites in Fall River Lake	33
Fig. 8. Map of site 14GR639 showing test squares A through D, and the large arrow indicates the direction of Fall River when it floods the field	73
Fig. 9. Shoreline Map of Fall River Lake	78
Fig. 10. Map of Historic Sites in Fall River Lake	81
Fig. 11. Map showing the location of pre-1947 bridging structures	83
Fig. 12. Low water bridging and rip rapping in Fall River Lake . .	95
Fig. 13. The Ladd and Otter Creek Bridges	98
Fig. 14. The Brown and Homer/Honey Creek Bridges	99
Fig. 15. The Fall River and Climax Bridges	101
Fig. 16. Bulls Creek and Snake Creek Bridges	102
Fig. 17. Durham Creek and Van Horn Creek Bridges	104
Fig. 18. Concrete culverts: one, two and three railed panel types	105

LIST OF TABLES

	page
Table 1. Kansas Cultural Chronological Sequence	11
Table 2. Projectile points from Fall River	55
Table 3. Endscrapers from Fall River	62
Table 4. Groundstone Tools from Fall River	63
Table 5. Bifaces from Fall River	65
Table 6. Cultural Materials Recovered at Fall River	68
Table 7. Smithville Lake Site Data	115
Table 8. Fall River Lake Prehistoric Archaeological Sites	117
Table 9. Archaeological Components on Fall River and Otter Creek .	119
Table 10. Identified Archaeological Components in Smithville Lake .	125
Table 11. Identified Archaeological Components in Fall River Lake .	126
Table 12. Component Numbers and Their Site Areas	131
Table 13. Graph showing the Square-meter Habitation Areas of Smithville and Fall River Lakes.	133

I

INTRODUCTION

In January 1979, Kansas State University and the U.S. Army Corps of Engineers, Tulsa district entered into contract DACW56-79-0037. This contract authorized the Department of Sociology, Anthropology and Social Work to conduct an Executive Order No. 11593 Cultural Resources Survey within the project lands of Fall River Lake.

The field work started in February 1979 and continued until July 1979. The project was under the general direction of Dr. Patricia O'Brien, Professor of Anthropology at Kansas State University. The fieldwork was supervised by Mr. David Elcock who was assisted by Ms. Margaret Rance and Mr. Steven Koppes. Mr. Steven Koppes analyzed and described the excavated materials reported in the 14GR630 Testing section of this report.

The following is the summation of all of the work done in the area, and the results of this survey.

II

ENVIRONMENTAL SETTING

Fall River Lake is located in the Osage Cuestas, a division of the Osage Plains. It is also just southeast of the Flint Hills. The Osage Cuestas are made up of a series of Northeast-Southwest irregularly trending, east facing escarpments between which are flat or gently rolling plains. The streams flow in valleys from one to several miles wide, with their floodplains from 100 to 200 feet below the Cuesta summits (Schoewe 1949:282).

The damsite is located at river mile 54.2 in Greenwood County. It is north of the town of Fall River and southeast of the town of Eureka. The major roads providing access to the lake are State Highways 96 and 99 (Anonymous 1947:1-2).

The land surrounding Fall River is in general forested slopes with prairie on the uplands. The river and its tributaries are lined with trees. There are four major eco-systems associated with the project area: the lake-river, the upstream bottom lands, the wooded slopes and the prairie.

The lake-river proper provides water and food for a variety of animals as well as a stable environment for the aquatic wild life. Fish and mollusca would have been abundant.

The upstream bottom lands are primarily cultivated, the main crops being milo, corn and wheat. Many of the abandoned fields are now covered with Johnson grass as well as cottonwood, sycamore and box elder trees. The narrow strips of trees along the river consist primarily of elm, ash, walnut, hackberry, burr oak, and box elder.

The wooded slopes include two types of forest. The post oak-blackjack and the oak-hickory. At the base of the steep hillsides burr oak and bitter hickory are the dominant species. Higher up and into the drier uplands and ridges, the post oak-blackjack association occurs (Ibid:4-2).

The prairie vegetation consists of a mixture of tall and mid grasses along with numerous wood plants. Big bluestem is dominant on the lower slopes and little bluestem is dominant on the upper slopes. Other natural range plants include sunflower, Indian grass, switch grass and goldenrod. (Ibid:4-3).

The game animals in the project area include birds (migratory and non-migratory: duck, goose, etc.), squirrel, mink, beaver, raccoon, deer, bobcat, otter, and several species of game fish in the river and lake (Ibid:4-4).

The climate of Fall River lake is characterized by moderate winters and long hot summers. The normal (average temperature varies from 32° in January to 80° in July. Snowfall rarely covers the ground for more than a few days at a time. The normal average rainfall is about 33 inches and approximately 70% of this falls April through September (Ibid:2-1).

Climatic Table

Rainfall	Ave. Annual	33.2"
	Max. Annual 1915	54.6"
	Min. Annual 1952	21.3"
Snowfall	Ave. Annual	11"
Temperature	Ave. Annual	58° F
	Max. Recorded	121° F
	Min. Recorded	-31° F

The Geology of the Area

The strata within the basin and damsite consist primarily of shales, sandstones and limestones of Pennsylvania age, belonging to the Oread formation of the Shawnee series. This strata has a slight regional dip to the west (Ibid:3-1).

The chipped stone tools found in Fall River Lake are most commonly made of Foraker chert from Foraker Limestone of the Council Grove group and Florence chert from Braneston Limestone of the Chase group. These strata are Permian in age and outcrop in the westernmost part of Greenwood County (see Zeller 1968) and are not locally available in the reservoir.

III PROBLEM

Although the scope of work for this project focused on the fulfilling of Executive Order No. 11593, that survey was to be conducted in such a manner that it could be focused upon some specific archaeological problem. Thus, our focus was twofold.

The first part involved a complete pedestrian survey of the project lands to locate all the extent "cultural resources." Cultural resources were interpreted to mean all traces of human behavior before the construction of the Fall River dam in 1947. Those resources would be prehistoric archaeological sites, historic archaeological sites, and pre-1947 bridging structures. The body of this report documents our discoveries.

The second part of the problem was to assess the prehistoric archaeological cultural components found in the area and to compare the settlement data derived therein to comparable data collected at Smithville Lake in northwestern Missouri near Kansas City. These data would be compared using the broad cultural ecological framework of Julian Steward (1955).

Steward's notion of cultural ecology has three basic procedures. They are: (1) one must examine the interrelationship of the exploitative or productive technology and the environment; (2) one must analyze the behavior patterns involved in the exploitation of particular area by means of a particular technology; and (3) one must show how specific patterns used to exploit an environment affect other parts of a culture

(Steward 1955:40-41). These procedures are rather broad and one's success in outlining them is obviously highly affected by the nature of the data available to be used. Since our goal is to compare Fall River Lake and Smithville Lake within a cultural ecological frame we should note the data's relationship to these procedures.

First, although Plains scholars have in no way worked out the total exploitative or productive technology of the peoples under study we broadly know its outline for the major cultural units. Also we do know the basic nature of the environments of the two lakes at least in the early historic period.

We know the Paleo-Indians were highly efficient and apparently specialized hunters of the megafauna of the Pleistocene. Therefore we can determine where, if at all, they exploited specific local areas within the two lakes. We know the later Archaic peoples focused on the local smaller game of the region and especially used seasonal wild plant resources. Since the plant resources are in specific micro-niches of the lakes we can see if they were potentially utilized. We have evidence that the Early Ceramic populations combined attributes of the Archaic economy with some horticulture. We can examine the parts of the environments used--especially soil settings in relation to this new variable. This latter point is even more relevant when dealing with the Middle and Late Ceramic peoples who were fulfilled farmers. With these peoples too we are interested in the nature of their settlements--villages and farmsteads also.

Smithville Lake is located on the Little Platte River just below its major tributary Camp Branch. The Little Platte is a tributary

of the Platte River in northwestern Missouri, and the Platte flows directly into the Missouri River. Environmentally Smithville Lake is about 25 miles inland from the Missouri River floodplain proper and fingers into the upland prairie. Fall River Lake is situated on a tributary of the Verdigris River to the south, and the Verdigris flows into the Arkansas River. Otter Creek is a major tributary of the Fall River in the reservoir. Environmentally Fall River Lake is about 205 miles inland from the Arkansas River floodplain proper and also fingers into upland prairie (see Fig. 1).

Both lake areas are situated on tributaries of tributaries of a major river drainage, the Arkansas bordering and flowing through the Southern and Central Plains, and the Missouri bordering and flowing through the Central and Northern Plains. A question of some theoretical interest is "how similar or different has been the human occupation of these regions during the 12,000 years preceding the arrival of the Euro-Americans?" An examination of these two drainages, where the survey data base is roughly comparable is one aspect of that larger question.

The second procedure is more difficult to implement due to the fact that such data is normally derived from specific excavated archeological sites. For example, if one has a beautifully analyzed set of data, like at the Coffey site (14P01) in the northern Flint Hills of Kansas, one can see the specific types of activities associated with a three week or month occupation of a temporary and limited activity site in late August through to early September. One can specifically

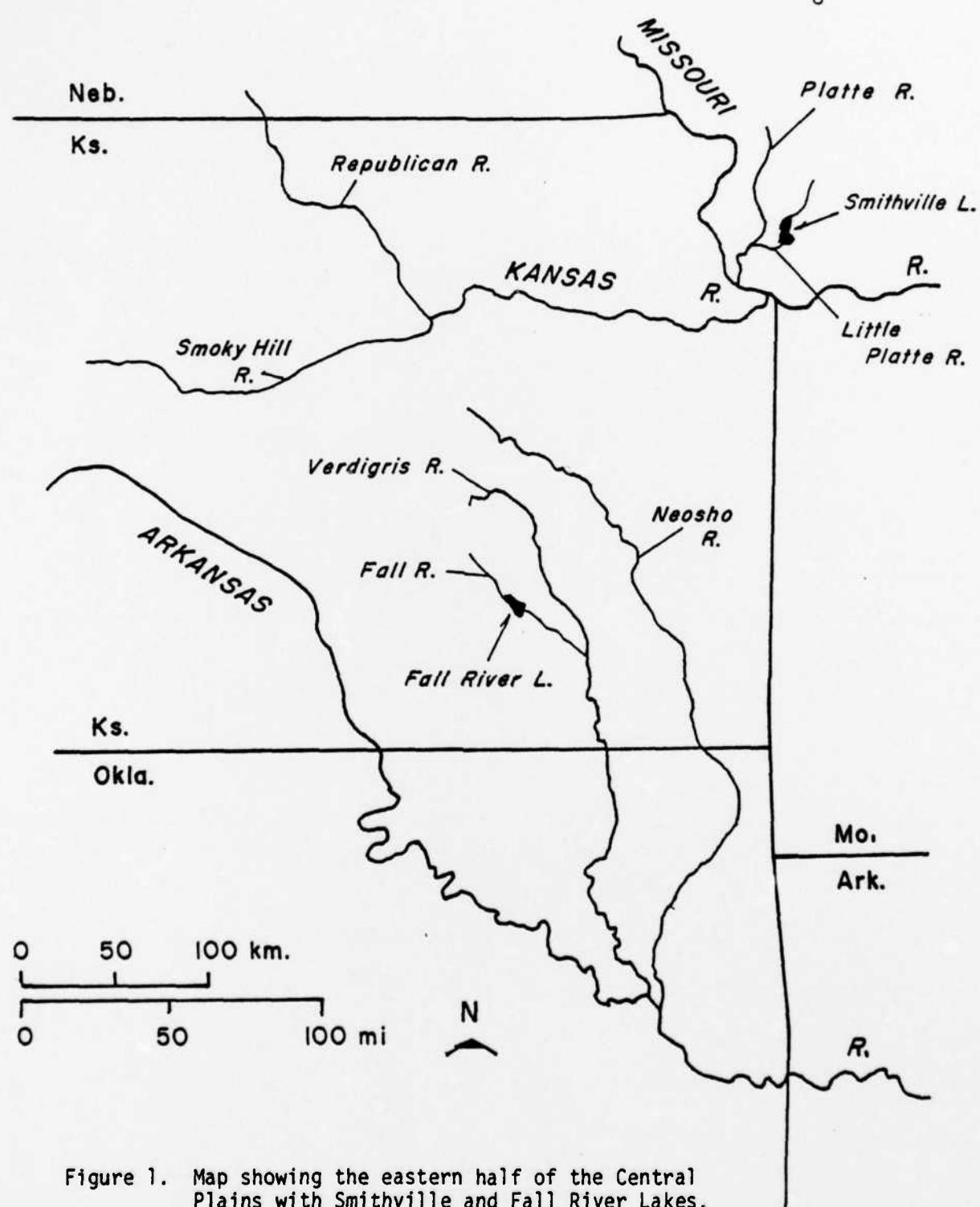


Figure 1. Map showing the eastern half of the Central Plains with Smithville and Fall River Lakes.

identify the number of animals killed and eaten, the food plants eaten, and the basic domestic activities performed--the wood used in fires, the tools made and resharpened for hiding, scraping, sewing, etc. activities. Since no excavated data base exists for Fall River we would obviously not be able to implement the second procedure. For all these same reasons the implementation of procedure three is impossible too.

Thus, this study will focus on attempting to implement the first procedure. Ideally to do this a site catchment analysis should be done but since such a study is beyond the resources of this contract and its duration we will focus on an examination of some of the variables which would be part of such a study. The details implementing our analysis will be outlined in section VIII.

IV

ARCHAEOLOGICAL BACKGROUND

The Fall River Lake area is situated along the western edge of the Osage Cuestas. The western boundary of Greenwood County (in which the lake is located) borders the eastern edge of the Flint Hills Upland region. As such, the archaeology of Fall River has affinities to that of both the Flint Hills as well as the Osage Cuestas.

Our archaeological understanding of the locality is a product of work in Butler County to the west (Bradley 1973; Fulmer 1976; Grosser 1973, 1977), in Greenwood County proper (Calabrese 1967; Eoff and Johnson 1968; Howard 1960), in Montgomery County to the southeast (Marshall 1972), and in Woodson County to the east (Howard 1960).

Additionally, work in other areas has illuminated the basic cultural-historical archaeological sequence of the State of Kansas. We will employ here the Kansas Antiquity Commission chronology of Paleo-Indian, Archaic, Early Ceramic, Middle Ceramic and Late Ceramic. The unit Euro-American is included to accommodate the pre-1947 occupation. Finally, some reference to the prehistory of northeastern Oklahoma will be important because Fall River ultimately is a tributary of the Arkansas River which is the major drainage of northeastern Oklahoma (Baerris 1951; Purrington 1971; Rohn and Smith 1972).

Table 1
Kansas Cultural Chronological Sequence

Paleo-Indian:	6,000 - 10,000 B.C.
Archaic:	6,000 B.C. - A.D. 1
Early Ceramic	A.D. 1 - 900
Middle Ceramic:	A.D. 900 - 1500
Late Ceramic:	A.D. 1500 - 1825
Historic:	A.D. 1825 - 1847
Euro-American:	A.D. 1847 - present

The following is a discussion of this basic sequence.

The Indian occupation represented in the Fall River Reservoir Area starts with Paleo-Indian times and runs until A.D. 1847. The Osage Indians had since 1825 been placed on a reservation whose lands included the southern two-thirds of the reservoir. In 1847 they were moved further west and then were moved south into Oklahoma, where they live today.

Paleo-Indian:

This chronological period is characterized by three basic cultural traditions: Llano, Lindenmeier and Plano (following Jennings 1968). Each is basically identified by one or more diagnostic artifacts usually projectile points. Additionally, the Paleo-Indian period is marked by the utilization of extinct megafauna: mammoth, mastodon, horse, camel, and bison (the antiquus and occidentalis varieties).

Llano is characterized by the hunting of the elephants and the Clovis projectile point. It dates Ca. 9,000 - 10,000 B.C. No

evidence of this complex was found in the Fall River Lake area on this survey.

Lindenmeier is associated with the hunting of extinct bison, and its diagnostic artifact is the Folsom projectile point. It dates ca. 8,000 - 9,000 B.C. No evidence of this complex was found in the Fall River either.

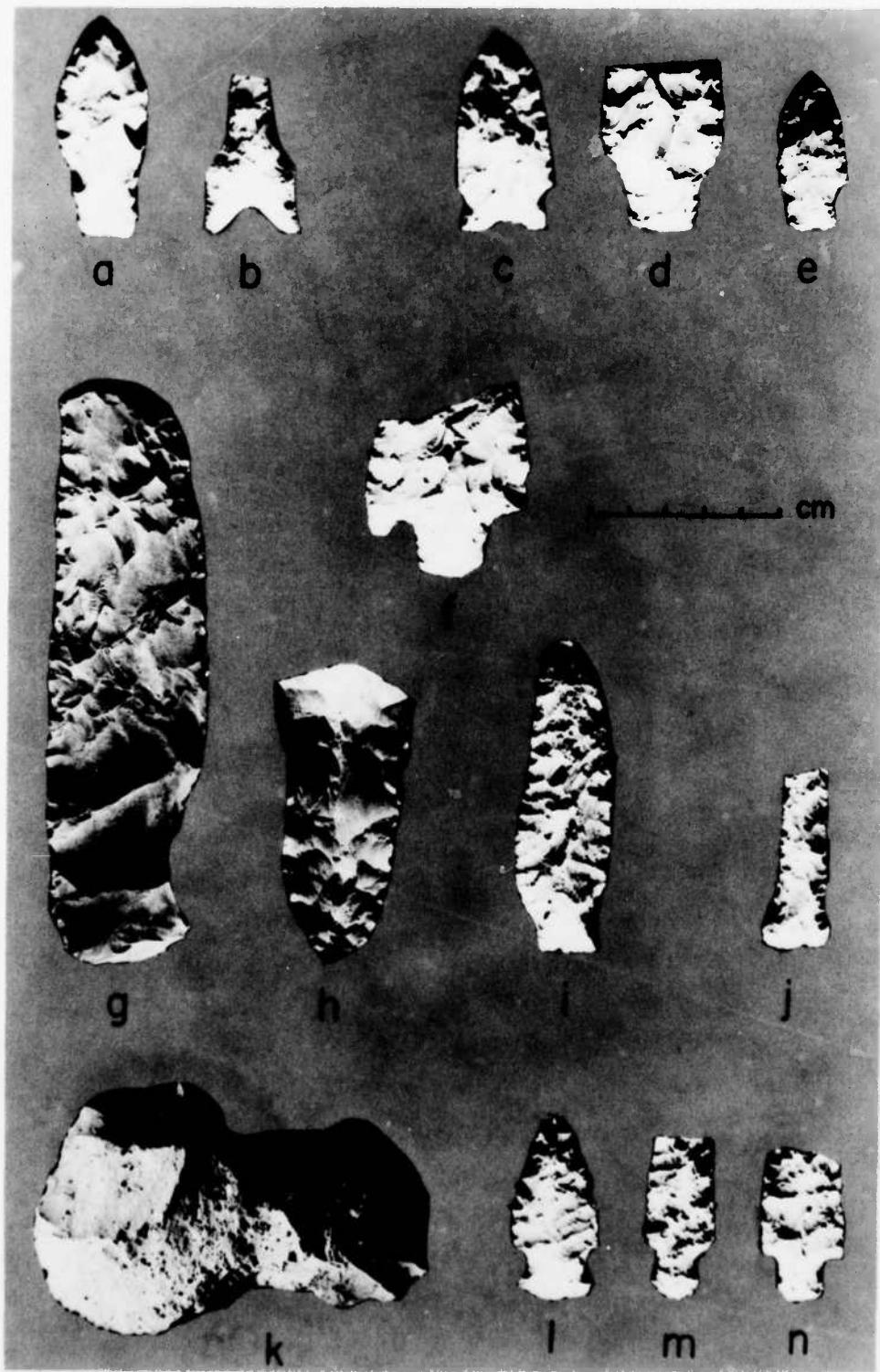
Plano which is rapidly becoming the best known of these early traditions, is characterized by great diversification of chipped stone technology. As a result, a variety of tools are diagnostic: Cody knives, and especially Plainview, Alberta, Hell Gap, Firstview, Scottsbluff, Eden, Agate Basin, Milnesand, Meserve and Dalton projectile points. Evidence of large kills of bison is present as is evidence of individual bison kills, the hunting of small animals, and the collecting of wild plants. It dates 6,000 - 8,000 B.C.

The Paleo-Indian era is represented in the project area by three projectile points of the Plano tradition. Found during this survey was a Hell Gap point (Frison 1974) and a Dalton point (Morse 1971) while an Eden point was observed in a private collection (see Fig. 2 a-b).

Traditionally, Hell Gap and Eden points have been called Paleo-Indian. Dalton, though, has been suggested as being very early Archaic because its subsistence patterns are very similar to that of the Archaic period. Also in the Fall River, most of the Paleo-Indian material was located on sites that contain Archaic materials. Nonetheless, in keeping with Jennings (1968:112), it is classified as Plano Paleo-Indian.

Figure 2. Fall River Lake artifacts: Paleo-Indian and Archaic.

- a. Hell Gap point from 14GR618
- b. Dalton point drill from 14GR671
- c. Chelsea "side-notched" point from 14GR618
- d. Chelsea "lanceolate" point from 14GR618
- e. Chelsea "lanceolate" point from 14GR624
- f. Munkers Creek knife from 14GR661
- g. Gouge made from a Munkers Creek knife fragment from 14GR671
- h. Calf Creek point from 14GR674
- i. Munkers Creek point from 14GR603
- j. El Dorado drill from 14GR647
- k. El Dorado ax from 14GR623
- l. El Dorado phase Dustin point from 14GR623
- m. El Dorado phase Dustin point from 14GR603
- n. El Dorado phase Duncan (?) point from 14GR624



Archaic:

The Archaic is characterized by the Indians hunting the modern fauna of the Plains, by extensively collecting wild plants, by climatic changes leading to the modern environments, and by an extensive diversity of cultures as reflected in not only projectile point style proliferation, but by an equal diversity of other tool types, and site types.

The Archaic on the Plains and in the Midwest is traditionally divided into Early, Middle and Late time periods. The data from Kansas is not too amenable to such a division at present and for that reason locally defined phases from Kansas will be used for site affiliation assignments in this study.

The most significant work for the Fall River area was Roger Grosser's work on the nearby El Dorado reservoir. Materials found in Fall River fit the phase sequence outlined by Grosser in his article, "A Tentative Cultural Sequence for the Snyder Site, Kansas." For that reason it was used as a guide for classification. Grosser defines three Archaic phases: Chelsea, El Dorado and Walnut.

The Chelsea phase (2800 B.C. - 2000 B.C.) is the first defined assemblage and its definition is still incomplete at this time. The artifacts considered to be diagnostic are short, squat points with concave bases and shallow side-notching. There are also some long bladed points with weak or no shoulders that appear to be in this phase, but the information is too sketchy at this time to be conclusive (Grosser 1973:235-236). Chelsea Phase points were found in this survey (see Fig. 2 c-e).

Roughly contemporaneous with the Chelsea phase and even the El Dorado phase in Kansas are two other Archaic cultural manifestations: Nebo Hill and Munkers Creek. Nebo Hill is defined for the Kansas City area but is presently known to extend into the Hillsdale area in eastcentral Kansas (Rohn and Woodman 1976). Munkers Creek is known from the Council Grove area of the Flint Hills.

The Munkers Creek complex has yet to be formally defined but the assemblage consists of large lanceolate points, Munkers Creek asystematical knives, chipped stone axes, gouges, and ceramic figurines (Witty 1969). Munkers Creek points and knives were found in this survey (see Fig. 2 f-1).

The Nebo Hill phase in the Kansas City area is better defined and contains lanceolate points (called Nebo Hill points) which are diamond-shaped in cross-section, 3/4 grooved groundstone axes, loaf-shaped manos and Clear Creek gouges (Shippee 1964). Additionally, fiber-tempered pottery has been reported by Reid (1978:120) who also extensively describes the settlement patterns. Possible broken Nebo Hill points, and mano were found in this survey.

Archeological research on the Archaic in the Plains and the nearby (to the east) Prairie Peninsula suggest the presence of a number of widespread projectile point traditions: a lanceolate style and a side-notched style. These styles are either occasionally contemporaneous or are presently inseparable chronologically due to a lack of detail on (1) the specifics of the knapping traditions, (2) due to a lack of sharply delineated point attributes, and (3) due to the

shallowness of many sites with mixed components being a product of agricultural disturbance.

Given the above parameters, it should be noted that Munkers Creek lanceolate material dates ca. 3100 B.C. \pm 200 based on the well dated sequence at the Coffey site in the northern Flint Hills around the Manhattan, Kansas area (Schmidts 1978). The only date on Nebo Hill lanceolate material is ca. 1600 B.C. from the type site in the Kansas City area (Reid 1979:247). Both these complexes are characterized by lanceolate points with the Nebo Hill points being more elegantly made. A shallow sidenotched tradition is also present to which Chelsea phase could be related. These materials are best documented from western Iowa being found at the Cherokee Sewer site, the Simonsen site, the Turn site, the Hill site, and the Logan Creek site to name a few. At all these sites the materials would seem to date around 6,600 - 2,800 B.C. (Anderson, et al 1979:196). But in the same region, points of the same style were found in an Archaic ossuary (the Lewis Central School site) dating about 865 B.C. (ibid:195) pointing up again the chronological complexities of the region. Minimally it suggests that the side-notched points could date from 6,000 B.C. to 1000 B.C. and the lanceolate types range from 3500 B.C. to 1500 B.C. Both these point traditions give way to a stemmed one in the very late Archaic of the first millennium B.C. Only further research, especially on single component sites will resolve these issues.

The next phase delineated by Grosser is the El Dorado phase (2000 B.C. - 1400 B.C.). The artifact assemblage is a little more

varied than the Chelsea phase, but is still somewhat similar. The diagnostic artifacts are long, narrow, stemmed points with straight to convex bases, some being concave. Along with the points are drills, grinding stones, choppers, scrapers, atlatl weights and axes (Grosser 1973). Points of this complex are present in the Fall River area (see Fig. 2 j-n).

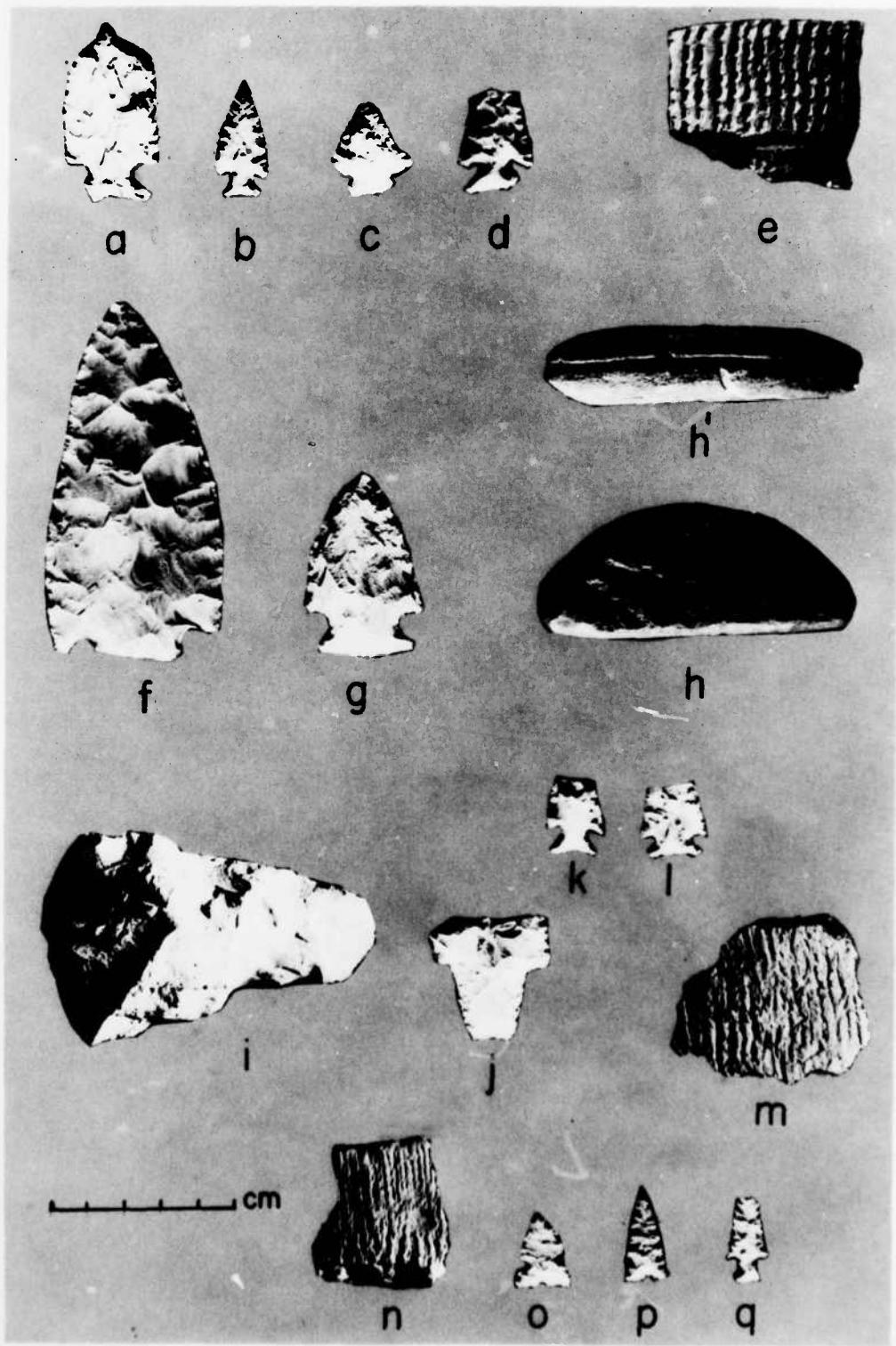
The last Archaic phase discussed by Grosser is the Walnut phase (1200 B.C. - A.D. 1). The diagnostic artifacts are corner-notched projectile points (Scallorn-like variants) that tend to be smaller than earlier points. They are called Walnut Valley points (Grosser 1973). This assemblage is also found in Oklahoma where it has been called the Grove focus (Baerris 1951; Purrington 1971). Points of this phase were also found on this survey (see Fig. 3 a-d).

Early Ceramic:

The first Fall River area pottery appears in the first millennium and belongs to a phase called Butler defined by Grosser. The Butler phase (A.D. 250 - 800) is primarily defined by its distinctive pottery. Butler pottery (for which there is no named type) is vertically cordmarked on the surface, and limestone, sand or clay tempered with limestone being the most common tempering agent. This limestone has a tendency to leach out, leaving pits and holes in the sherd (see Fig. 3 m). The rims and lips are most often flat and the body sherd tend to be fairly thick. The chipped stone assemblage consists of large corner-notched and stemmed dart points, like Gibson, Dickson, Ensor, Synder, Marcos, as well as some arrow points like Scallorn and Sequoyah

Figure 3. Fall River Lake artifacts: Late Archaic to Late Ceramic.

- a. Walnut Valley point from 14GR659
- b. Walnut Valley point from 14GR657
- c. Walnut Valley point from 14GR618
- d. Walnut Valley point from 14GR624
- e. Cuesta Dentate Stamped rim sherd from 14GR657
- f. Synders point from 14GR624
- g. Ensor point from 14GR313
- h. Early Ceramic boatstone(side view) from 14GR622
- h' Early Ceramic boatstone (top view) from 14GR622
- i. Butler phase ax or celt from 14GR622
- j. Butler phase Langtry point from 14GR633
- k. Butler phase Scallorn (?) point from 14GR622
- l. Butler phase Scallorn point from 14GR655
- m. Butler phase limestone tempered potsherd from 14GR630
- n. Pomona Ware rim sherd from 14GR630
- o. Washita point from 14GR655
- p. Huffaker point from 14GR626
- q. Seqauyah point from 14GR659



(see Fig. 3 f-1). There are also bifaces, celts, grinding stones, and bone and shell artifacts (Grosser 1973).

The first Early Ceramic materials analyzed for the Fall River region were those from the Curry site (14GR301) in northeastern Greenwood County (Calabrese 19670. Calabrese defined two pottery types: Verdegris, which was limestone tempered, and Greenwood, which is indurate clay tempered. The former is related to the Butler phase pottery while the latter is related to Pomona ware of the Middle Ceramic period. The Curry site originally was called a Keith focus variant, but the State Archaeologist (T.A. Witty) recently has been assigning it to an as yet undefined Greenwood phase.

Two similar sites (14BU4 and 14BU19) in the El Dorado reservoir have similar limestone tempered pottery and projectile points as the Curry site and Fulmer (1976:93) notes their relationship to Grosser's Butler phase, and to Keith focus.

Apparently contemporaneous with the Butler phase is another ceramic tradition called the Cuesta phase (called Cooper focus in northeastern Oklahoma). The radio carbon dates on Cuesta are enigmatic dating around A.D. 900 but stylistically it would date to about A.D. 1 - 500 because of strong similarities to Kansas City Hopewell. The phase is outlined by James Marshall (1967) in his report on the Elk City Reservoir to the southeast of Fall River, and new data from Big Hill Lake (Rowlison 1977).

The pottery is tempered with indurate clay and its surfaces range from cord marked to smoothed, with a majority of sherds showing partial smoothing. It is a Hopewellian type of pottery (see Fig.

3 e) with zoned dentate stamping, and dentates or bosses occurring near the lip, and a variety of named types exist: Cuesta dentate, punctate, stick impressed, plain, etc. (Marshall 1972:49). In Oklahoma these materials are called Cooper and Ozark zone stamped, Honey Creek plain and Cowskin dentate stamped (ibid:249).

According to Marshall, the points associated with this phase are Gary, Langtry, Ensor, Ellis, Williams, Bulverde, Scallorn, Motley and Desmuke (see Fig. 3 f-g, j). These are mostly corner-notched and side-notched dart points that indicate the continued use of the spear thrower, and minimal use of the bow and arrow. The houses are circular to oval (approximately 40' x 30') with limestone hearths. No evidence of house structures were found during the Fall River Survey, but pottery and points of the phase were present (see Fig. 3 3-g, j).

The Early Ceramic period which may have to be renamed given the discovery of Nebo Hill pottery in the Archaic, is marked by the presence of two broad ceramic traditions as well as two projectile point styles in both the Fall River area and southeastern Kansas more generally.

A Hopewellian variant (called Cuesta in Kansas and Cooper in Oklahoma) is present, and is identified by the previously mentioned pottery types with zoned dentate stamping, and dentates or bosses on channeled rims. These sherds seem to occur with the corner-notched and side-notched dart points mentioned earlier. The relationship of this assemblage to the limestone tempered ceramic tradition called Greenwood (né Keith focus) by Witty and occurring with Scallorn-

like points is slightly obscure. The Curry site materials date ca. A.D. 400 (Calabrese 1967:78). Materials at the El Dorado sites: 14BU4 and 14BU19, would date around the late end of the Early Ceramic period or around A.D. 400-900 (Fulmer 1976:95) and unlike the Curry site only a single component was present. Grosser's (1968:230), dating of Butler phase at ca. A.D. 250-800, and the inclusion of Cuesta pottery and dart points with the limestone tempered ceramics and corner-notch arrowheads is a product of the mixing of these two traditions within the plow zone of the Synder site where they were found. A not uncommon problem in the region.

Stylistically the Cuesta pottery and points have affinities to the Hopewellian traditions to the east which date A.D. 1 - 500 or earlier. The Greenwood (neé Keith) and Butler materials probably date around A.D. 400 - 900. This suggests the Cuesta is earlier than Greenwood-Butler and may be ultimately derived from it (see O'Brien, n.d. chapter on the Early Ceramic).

Middle Ceramic:

The Middle Ceramic is represented in the lake area by the Pomona phase (A.D. 900 - 1500). The most diagnostic item of the Pomona phase is its pottery. Pomona ware is tempered with indurate clay with cord-wrapped paddle markings which are somewhat smoothed on the exterior. The interior is smooth but uneven with gouge depressions often visible. The most common form of vessel is a globular jar with a constricted orifice. The pottery is most often undecorated but when decorated with incision, it occurs mainly on the rim (see Fig. 3 n).

The points associated with this period are small triangular notched or unnotched points (see Fig. 3 o-q) like Reed, Harrell, Huffaker, Fresno and Washita, and are widespread throughout the Plains and eastern U.S. at this time. These points are arrowheads and the absence of large points indicates the discontinued use of the spear thrower (Witty 1967; Wilmeth 1970). The houses of the Pomona phase are often paired. They are oval (25' x 15') with storage pits inside (Witty 1967). Pomona pottery and points were present in the reservoir area (see Fig. 3 n-q).

Late Ceramic:

There is a Late Ceramic manifestation present in the Fall River Reservoir Area, but it is not found in abundance. It is the Lower Walnut focus of the Great Bend Aspect. The Great Bend Aspect is proto-historic Wichita Indian. The diagnostic pottery is Cowley Plain, which is a shell-tempered gray ware that has shallow pitting, and smooth interior and exterior surfaces. The projectile points tend to be triangular and small of the Reed, Huffakers, Washita, Harrell and Fresno varieites with the unnotched Fresno being most abundant (see Fig. 3 o-q). Also found are drills, scrapers, bifaces and groundstone tools (Wedel 1959). Cowley Plain sherds were found in the survey area.

Historic:

The Historic occupation dating from A.D. 1825 - 1847 is associated with the Osage Indian habitation of the area. No data relating to this occupation has been found from the region in general nor from the reservoir area specifically.

Euro-American:

The Euro-American occupation dates from A.D. 1847 to present, and represents White settlement into the area especially following the Civil War. A large number of archaeological sites in the reservoir belong to this period. In reality these sites reflect the farmsteads of the people who were displaced by the construction of the reservoir in 1947. The artifacts present include mostly 20th century crockery, glass, dishes, iron tool and machine parts as well as stone or concrete house foundations, root cellars and wells. These sites are identified because even though we have no archeological definition of the period per se, because they will form the core of a future data base in studies of 20th century rural life to come. Seventy-five sites were found in the lake area.

Site Settlement:

Basic site settlement data are unavailable for the Paleo-Indian period in both southeastern Kansas and the state of Kansas generally. A natural kill of bison (ca. 7 to 9 animals) was found in the late 19th century by Williston (1902) at the Twelve Mile Creek site in Logan county in western Kansas. More recently (in 1979) a shallow but extensive (covering ca. 30 acres) Hell Gap site was found in Norton county in northwestern Kansas. This is not a kill site but may represent a tool manufacturing site as a quarry is located nearby. No work has been done on it yet. Presumably sites of this period are highly specialized and were used for a short period of time.

The Archaic period settlement data suggests that a series of specialized, limited activity sites probably associated with a base

camp is the norm. Classic examples are the Flint Hills sites like Coffey (14P01) in the north on the Big Blue River which is a late summer - early fall camp site (Schmidts 1978). Or the Falconer site in the El Dorado area which was used at the same time of the year (Bradley 1973:63-64). The Synder site near El Dorado with its pits, structures, and burial (Grosser 1977:124-129) would be an example of a base camp. Given the nature of an economy of hunting and gathering we would not expect otherwise.

Our basic data on settlements in the Early Ceramic period comes from the work of Marshall (1972) and Rowlison (1977) on the Cuesta phase and the work of Calabrese (1968), Fulmer (1978) and Grosser (1973) on the Greenwood-Butler phase. Located often near old oxbow lakes (near their river banks on the Elk River) Cuesta sites are large ($7\pm$ acres) nucleated villages with large houses (oval in shape) randomly distributed within them (Rowlison 1977:14). Midden build up is extensive and suggests long duration. Burials of dogs and infants were found in the midden (Marshall 1972:40-41). On Big Hill Creek to the east of Elk City (ca. 20 miles) the Cuesta sites are extended rather than nucleated though they too were occupied for some duration. Data on Greenwood-Butler sites suggest a pattern of villages, hunting camps, and burial mounds in the El Dorado Lake area (Leaf 1979:15). The Curry site (14GR301) in Greenwood county would be an example of a village. It covers 20 acres, and had a specialized burial area within it (Calabrese 1967:42-49). Since no burial mounds were found in the Fall River Lake area we assume the Curry site pattern is operative.

The Middle Ceramic period as represented by the Pomona occupations in southeastern Kansas are characterized by small, scattered communities which may be a product of single families or several families. No large villages are reported but the houses are often paired. Limited agricultural activities and hunting and gathering was the base economic pattern (see Wilmeth, 1976; Witty 1967:2).

The Late Ceramic, Great Bend Aspect, sites range in size from 3-4 acres to 40 or more acres. The large sites are characterized by the presence of large mounds (Wedel 1959:573). "Council-circles" are found at some large villages (ibid). More recently the small, shallow grass-covered houses of the historic Wichita (Monger 1970) have been excavated. Fortifications, ditches, stockades and burials have not been found (Wedel 1959:573).

V

SURVEY METHODS

This study is an Executive Order 11593 survey of all the land (12,547 acres) that lay within the boundaries of Fall River Lake near Eureka, in Greenwood County, Kansas. The tracts are numbered using the real estate designations employed when the land was purchased by the U.S. Army Corps of Engineers in 1947, and a detailed description of each is presented in the background report.

All of the land was surveyed with the exception of those tracts inundated by the permanent floodpool, and those whose ground cover was so dense as to make them virtually impenetrable. The total number of acres surveyed is approximately 12,147 or 96% of the project lands.

Figure 4 shows the land surveyed while Figure 5 shows the actual ground cover condition of the land during the survey. The bulk of the land in the lake area was under cultivation with the next largest category of land use being pasture, and natural vegetation. Along the streams and field rows were stands of timber. Figure 6 shows the visibility of the various tracts at the time of their survey.

Definition of Terms:

Visibility - This refers to the percentage of topsoil visible at the time of survey. That is, a rough ration of soil to vegetation in an arbitrary unit like a meter square. For this survey four visibility division were used.

Poor - This term is used when less than 25% of the topsoil was visible.

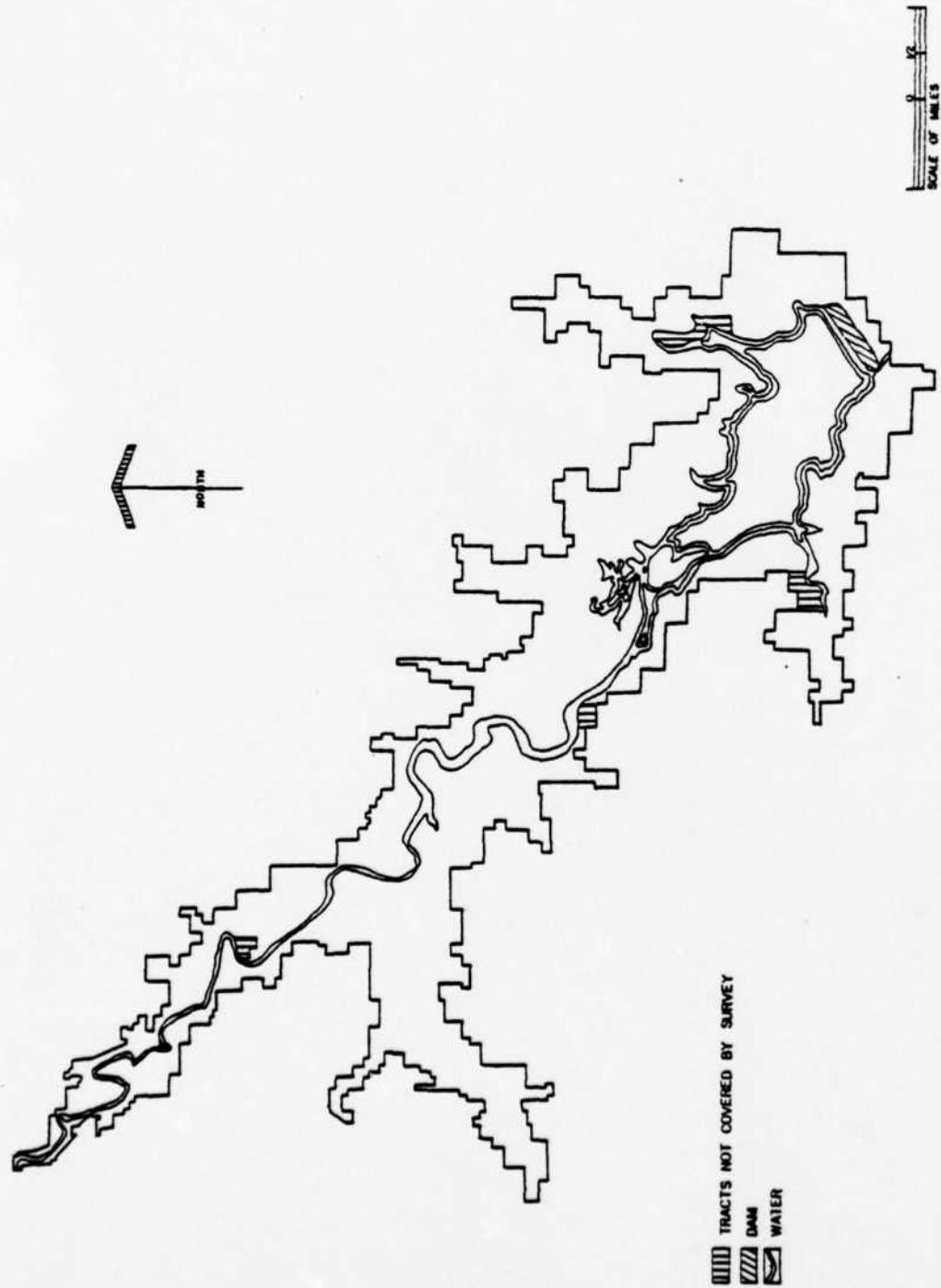


Figure 4. Map Showing Tracts Surveyed in Fall River Lake.

Figure 5
Map Showing Ground Cover Character
Of Fall River Lake Tracts

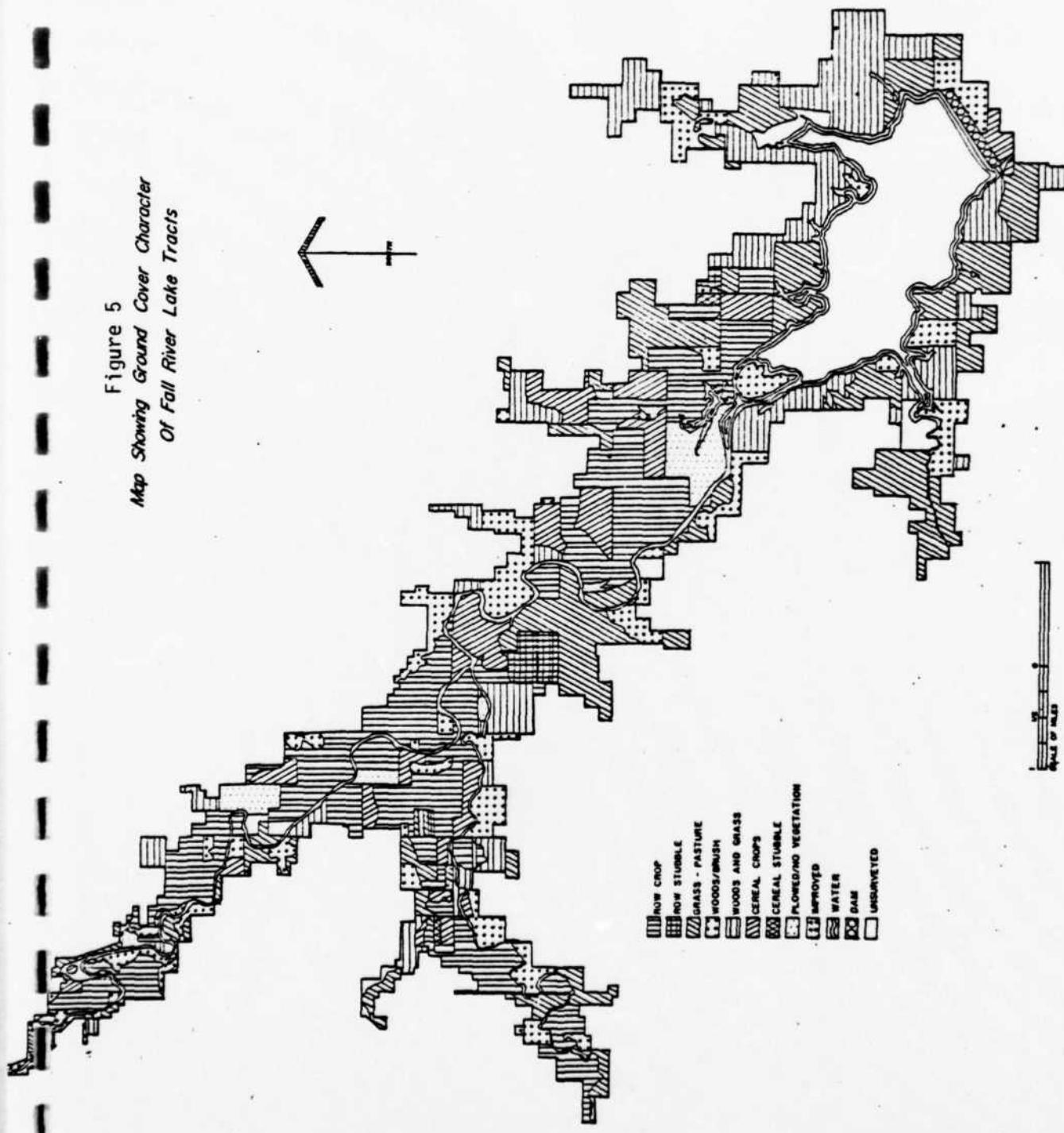
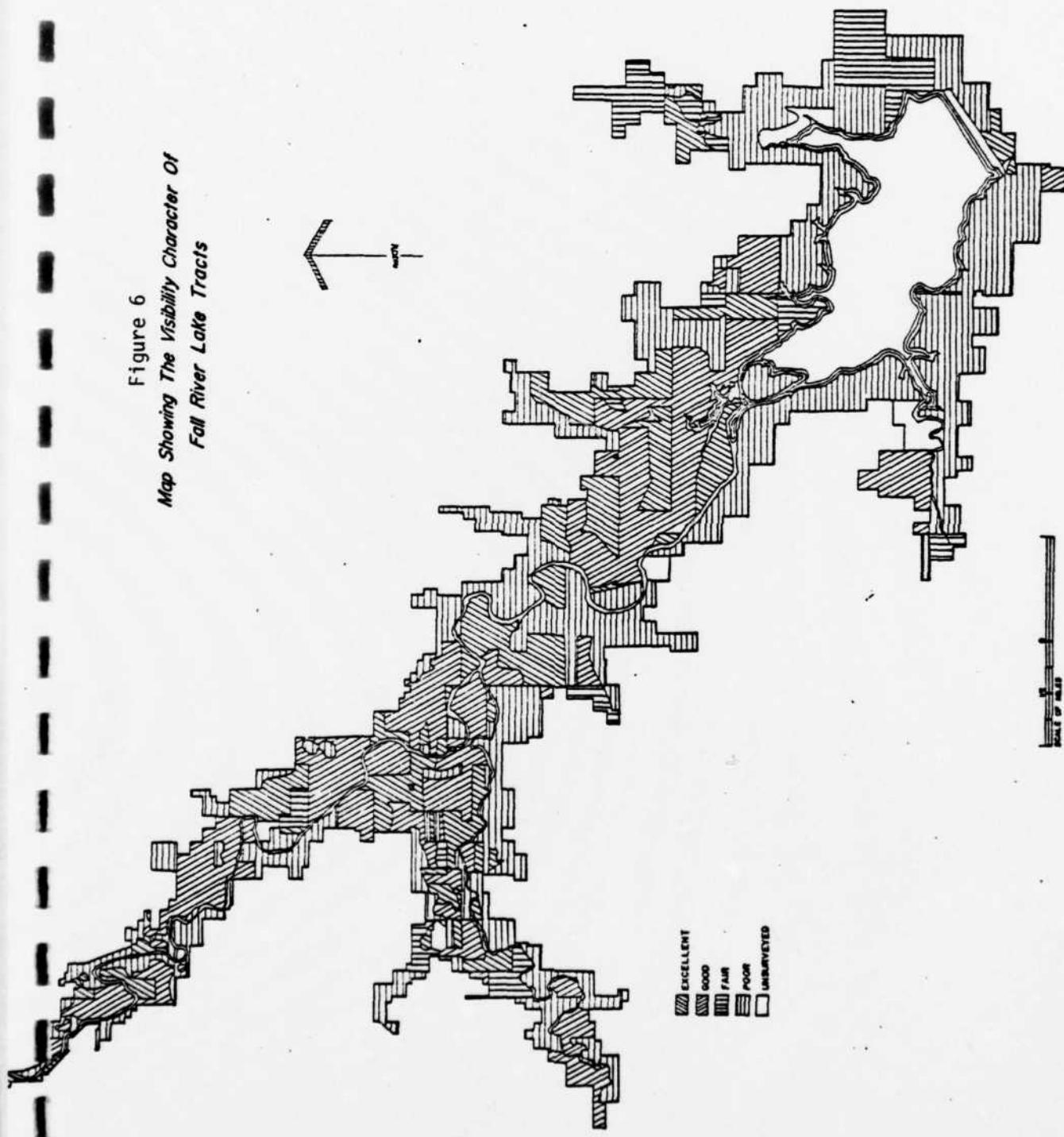


Figure 6
Map Showing The Visibility Character Of
Fall River Lake Tracts



Fair - This describes the visibility when between 25% and 50% of the topsoil can be seen.

Good - This describes the visibility when between 50% and 75% of the topsoil can be seen.

Excellent - This describes the visibility when between 75% and 100% of the topsoil can be seen.

Two survey techniques were utilized during this project and they are as follows:

Standard - This was used whenever possible to increase the possibility of finding all sites and is to be assumed as the method used unless otherwise stated. This type of survey involves walking to and fro across the field at specific intervals (10 meters; 20 meters, etc.) creating a zigzag pattern.

Unfortunately, not all terrain is suited to such survey techniques due to dense or heavy ground cover. A method called "random" was employed in such circumstances.

"Random" - As the name implies there is no formal pattern to this method. In a given tract all likely occupation areas (hilltops, rises, knolls, ridges, etc.) in the field were checked as well as any bare areas (eroding creek banks or sites of rodent activity, etc.) in a search for cultural debris. Associated with this method is the technique of shovel testing. This technique is especially useful when the visibility is zero (i.e. we are in "jungle"). It involves removal of a soil plug with a shovel which is then

checked for artifacts. The standard depth for such a test is about 30 cm and was the depth used in this study. Also used for sub-surface testing was an Oakfield soil corer and a post hole auger.

Historic Sites are numbered in the 1600 series while prehistoric sites are numbered in the 600 series (we use the established series usage of the Kansas Antiquity Commission).

VI

PREHISTORIC CULTURAL RESOURCES
IN FALL RIVER LAKE

Approximately 86 prehistoric archeological sites are known from the Fall River Lake lands. Of these 10 were found before this survey work while 76 were discovered in 1979. Figure 7 shows their approximate locations. The following descriptions give basic data on the sites as it relates to their size, physiographic location, cultural affiliation and the descriptions of some artifacts found at the sites.

Table 2 gives all the basic data on the projectile points recovered on this survey while Table 3 deals with endscrapers, Table 4 with groundstone tools, and Table 5 with bifaces. Finally, Table 6 records the quantities of non-specific tools or fragments thereof, found during this work. This includes broken biface segments, faceted limestone, pottery (Pomona Ware or Butler limestone tempered ware), worked or retouch chert, etc. which were recovered. This survey did not collect chert chips, limestone and rough rock from the surface of sites. Obviously these items were present at all sites.

Those scholars who wish copies of the official State of Kansas site survey forms for their research can have access to them through the Department of Sociology, Anthropology and Social Work, Kansas State University; the Museum of Anthropology, University of Kansas; and the Division of Archaeology, Kansas State Historical Society.

This section of the report will not present basic data pertinent to the settlement analysis (i.e. soil types, 19th century, stream rank, etc.). These will be given in Table 8 in the section dealing with Settlement Patterns.

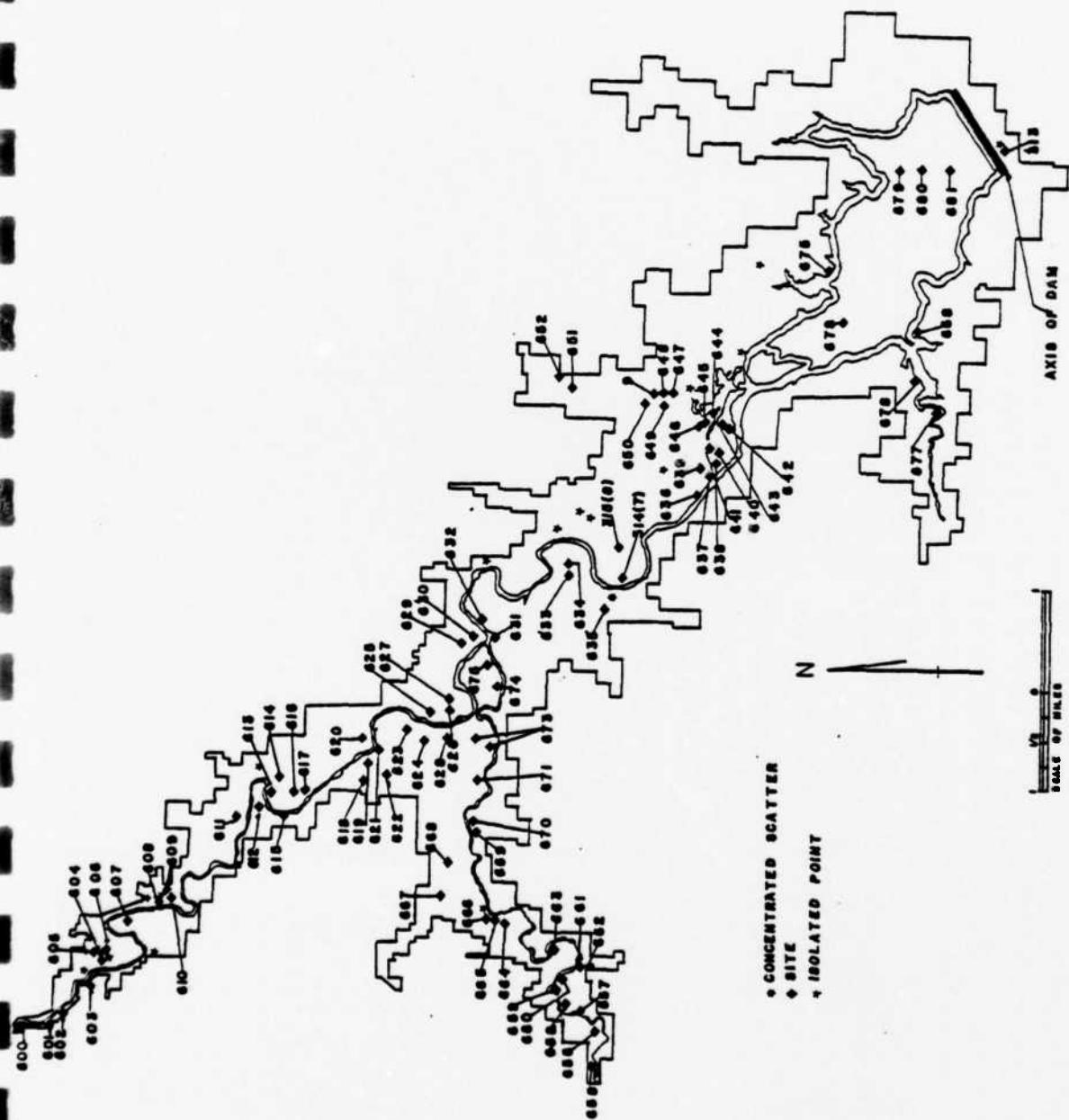


Figure 7. Map of Prehistoric Sites in Fall River Lake.

Finally, those sites whose cultural affiliation is designated unknown are sites for which no diagnostic tools or artifacts were found.

Pre-1979 Survey Work:

In general no systematic archeological survey has been done in Fall River Lake. In 1947 Albert C. Spaulding, then of the Museum of Natural History, the University of Kansas, conducted a two day visit in May, 1947. At that time he discovered six sites (now numbered 14GR676-681) in the area of the permanent pool. Of these six, five are now inundated, and one is an area that is annually flooded. The brief descriptions which follows represents what is known of these sites.

14GR676. This site was surveyed by A.C. Spaulding in 1947 (its his site #1). It was on a low rise on the south side of Fall River. Today the site is permanently inundated by the lake. It would have been in Tract C-14.

14GR677. This was site #2 surveyed by Spaulding. It would be located in the campground of Fall River State Park. The site was described by Spaulding as very small and concentrated. It would have been in Tract C-8-1.

14GR678. This was site #3 surveyed by Spaulding and was located in Tract C-7. The tract was resurveyed in search of this site but the vegetation was so dense and jungle-like it was never found.

14GR679. Spaulding's site #4 was on a low terrace east of Fall River. Today the site is permanently inundated by the lake. It would have been in Tract A-13.

14GR680. This was Spaulding's site #5. In 1947 when visited it

was being destroyed by borrow pit operations and today the area of the site is permanently inundated. It would have been in Tract A-4.

14GR681. Site #6 located by Spaulding was also being destroyed by borrow pit operations and it too today is permanently inundated. It would have been in Tract A-4.

A second examination of the area by museum personnel of the University of Kansas occurred in the summer of 1967 in association with a Fall River Watershed Management project (Eoff and Johnson, 1968). That work was funded by the Inter-Agency Archaeological Salvage Program of the National Park Service. The field work was done by John D. Eoff and David R. Evans under the supervision of Dr. Alfred E. Johnson.

The bulk of the survey area was north of and outside of the reservoir lands proper but 3 prehistoric sites (14GR7-9) were located on project lands.

14GR7. This habitation would have been in Tract C-51. It is described as a large site, covering 50 acres, with "Woodland or Archaic" materials.

14GR8. This habitation site would have been in Tract C-49-1. It is described as a small scatter of chips and burned rock on an east-west running ridge. Cultural affiliation is "Central Plains".

14GR9. This habitation site would have been in Tract C-46-1. It is described as a very small with several concentrations of debris on the east side of an unnamed stream. Culturally it is "Woodland".

The final previous survey work was that of Thomas A. Witty, Jr., the State Archeologist, Kansas State Historical Society. In December, 1973 Witty visited the lake to examine some of the land controlled by the Kansas Fish and Game Commission. At that time he located three sites

(14GR313, 314 and 315). Of these three sites two appear to be sites 14GR7 and 14GR8 recorded by the University of Kansas in 1967. Their descriptions are as follows. These sites were revisited on this survey.

14GR313. This habitation site was located at the foot of the dam in the Public Use Area. The site covered 600 sq. meters and had Cuesta and Butler phase remains, and some El Dorado phase Archaic materials. The Butler remains consisted of one limestone tempered potsherd while there were seven Cuesta sherds including two Cuesta Dentate Stamped and two Synders points. The El Dorado phase was represented by two Dustin points. It would have been in Tract A-2-A.

14GR314. This habitation called the "Two Duck" site is really site 14GR7. It covers 15,000 sq. meters and has Butler and Cuesta phase materials. This site was relocated by our survey and is in Tract C-51-A.

14GR315. This habitation site was located just east of the 14GR313 and appears to also be site 14GR8. This site is small covering ca. $\frac{1}{2}$ acre or 2,000 sq. meters. Cultural materials found during our re-survey indicate there is a Butler phase component. The site is in Tract C-49-1.

Thus, it would appear that approximately 10 prehistoric archeological sites were known from the Fall River Lakes lands under the jurisdiction of the Tulsa District, U.S. Army Corps of Engineers before the Executive Order (11593) compliance survey reported herein was conducted.

E.O. 11593 Site Survey:

Seventy-six prehistoric archeological sites were found on this survey. A brief description is presented here giving number, general location, cultural affiliation (where possible), and size.

A detailed description of each site, exact location, number of artifacts recovered, etc. was collected and recorded on the official Kansas State Archeological Survey forms. These forms and the data contained therein are on file at the Division of Archaeology, Kansas State Historical Society, Topeka, at the Museum of Anthropology, the University of Kansas, Lawrence, at the Department of Sociology, Anthropology and Social Work, Kansas State University, Manhattan, and at the Environmental Office of the Tulsa District, U.S. Army Corps of Engineers, Tulsa, Oklahoma. These data are of course available to responsible scholars.

14GR600. This site is located in tract D-101. The site contains the remains of a prehistoric occupation of unknown cultural affiliation. It is situated on a slight rise west of Fall River and covers an area of 100 sq. meters.

14GR601. This site is located in the southern portion of tract D-101. The site contains the remains of a prehistoric occupation of possible Pomona Phase affiliation based on two Pomona Ware sherds. It is situated on a terrace west of the river. The site covers approximately 1000 sq. meters with a light scatter.

14GR602. This site is located in tract D-98. The site contains the remains of a prehistoric occupation of unknown cultural affiliation. The site is on flat bottomland and covers approximately 1000 square meters with a light lithic scatter.

14GR603. This site is not within the project limits but is approximately 50-100 m west of tract D-97-1. This is a multicomponent Archaic site. A Munkers Creek point indicates a Munkers Creek phase and two Dustin points mean there is an El Dorado component. It is situated on a terrace southwest of the river and covers approximately 200 sq. meters.

14GR604. This site is located in tract D-97-1 and contains the remains of a prehistoric occupation of unknown cultural affiliation. The presence of a single "round" endscraper (see Table 4) might indicate an Early Ceramic affiliation. Also present is a limonite ax bit and a triangular abrader. The site is north at a slough that runs from northwest to southeast across the field, and is located on a knoll. The area of scatter is 75 sq. meters and light.

14GR605. This site is located in tract D-97-1 and contains the remains of a prehistoric occupation of Archaic affiliation. The phase identification is not certain but may be El Dorado phase. A concave based stemmed (Duncan?) point was found. The site is on flat ground that has several inches of silt covering it. The area of scatter is 75 sq. meters.

14GR606. This site is located in the southeast corner of tract D-97-1. The site contains the remains of a prehistoric occupation of a possible Archaic (Chelsea?) affiliation. A point has a broken base which is diamond shaped in cross-section with an elongated, round contracting stem base. It is possible it is a variant on the Chelsea lanceolate point. The site is covered by silt and is in a relatively flat area east of the river. The area of scatter is approximately 75 sq. meters.

14GR607. This site is located in the center of tract D-92 and is on a bend of the river. The site is a multicomponent type and contains both Walnut phase and Pomona phase remains. The Walnut phase is represented by a Walnut Valley point while Pomona is shown by 39 Pomona Ware sherds and two Washita points. It is crescent shaped following an old oxbow in the river and is on a terrace approximately 30 m east and north of the river. The area of scatter is approximately 250 sq. meters.

14GR608. This site is located in tract D-76 and is a multicomponent type with an Archaic (Munkers), Butler and possibly a Pomona phase. A possible Munkers Creek biface along with a Butler phase, Gary and Langtry point base were found. A Fresno point was also found which could indicate the Pomona phase. Also present were 3 corner-notched dart points which may be Early Ceramic but no pottery was found. The site is located on a terrace east of the river and covers approximately 1250 sq. meters.

14GR609. This site is located in tract D-78-1 and is a multi-component site with Cuesta as well as a Pomona phase. A Marcos point of Cuesta and a Reed point of Pomona were found. The site is located on a rise west of an intermittent stream and north of the river. It covers approximately 5000 sq. meters with a moderate scatter.

14GR610. This site is located in tract D-76 and is a prehistoric occupation of unknown cultural affiliation. The site is 50 m south of 14GR608 and is a cluster of burnt limestone and bone. The flint scatter was light. The site is situated on the same terrace as 14GR608 and further investigation may prove that these two sites are related.

It covers approximately 75 sq. meters.

14GR611. This site is located in tract D-84 and is a multicomponent type with both Pomona and Butler phases present. It is situated on a knoll south of an intermittent stream and east of Fall River. Both phases are represented by pottery (1 Butler sherd and 2 Pomona Ware). Also found was a plano-convex endscraper (see Table 4), and a drill. The drill was a slender shaft type, 4.9 cm. long, 1.77 cm. wide and 0.83 cm. thick. It was made of whitish chert. The site covers about 2000 sq. meters with a moderate scatter.

14GR612. This site is located in tract D-86 and is a prehistoric occupation of unknown cultural affiliation. It is located on a hill in the middle of the tract. The scatter is light and covers approximately 2500 sq. meters.

14GR613. This site is also in tract D-69 and it has a prehistoric component as well as an Euro-American one. The prehistoric component is Butler phase, it has one limestone tempered potsherd. The site covers the top of a hill approximately 3600 sq. meters and is south of the river.

14GR614. This site is also in tract D-69 and it has a prehistoric component as well as an Euro-American one. The prehistoric component is Butler phase, it has one limestone tempered potsherd. The site covers the top of a hill approximately 3600 sq. meters and is south of the river.

14GR615. This site is located in tract D-68 and is a prehistoric occupation of unknown cultural affiliation. The site has a very

light scatter and located on the west bank of Fall River, and covers only 16 sq. meters.

14GR616. This site is located in tract D-66 and is a prehistoric occupation of unknown cultural affiliation. The site is located on level ground east of an intermittent stream and north of site 14GR617. The scatter is light and it covers 1600 sq. meters.

14GR617. This site is located in Tract D-66, south of site 14GR616 on a terrace east of the Fall River. The site is Butler phase based on a single Lantry point base. It covers 1175 sq. meters with a moderate scatter.

14GR618. This site is located in tract D-43 and is called the French site. It is a multicomponent type with Paleo-Indian and Archaic components. The site is situated on a rise east of the river. The site covers 1800 sq. meters with a moderate to heavy scatter. The Paleo-Indian phase is represented by a Hell Gap point. The Archaic period has three phases represented: Chelsea, El Dorado and Walnut. There are six "Chelsea" lanceolate and one side-notched points for the Chelsea phase. There is also a Munkers Creek ax--with its bit missing which is 7.55 cm. long (inc.), 6.52 cm. wide and 3.73 cm. thick. The El Dorado phase is represented by a Dustin point, a "Duncan" stemmed point and a "wasp-waist" ax. The ax is 12.0 cm. long, 5.0 cm. wide and 3.98 cm. thick. Finally, the Walnut phase is represented by a Walnut Valley point.

14GR619. This site is located in tract D-43 and is west and south of 14GR618. This site is on a terrace west of the river and its exact phase identification is difficult as its only point is very battered. It looked Gary-like so it maybe Butler Phase. The scatter is relatively light and covers approximately 400 sq. meters.

14GR620. This is a multicomponent site in tract D-47. The site has a Butler Phase based on two limestone tempered potsherds

and an El Dorado component based on three Dustin points. It is situated on a knoll east of an intermittent stream and north of the river. The scatter is moderate to heavy and covers 1500 sq. meters. Finally, there is a fragment of a possible "Calf Creek" point like those associated with the Munkers Creek component at the Coffey site.

14GR621. This site is in tract D-44 and is Pomona phase based on seven Pomona Ware sherds and one side-notched arrowhead. The site is south of the river and on a terrace, its scatter is light and covers approximately 1500 sq. meters.

14GR622. This site is located in tract D-42 and is an Archaic site of the El Dorado phase based on one Dustin and two Duncan points. Additionally, a longitudinal incised grooved boatstone was found which according to Finnegan and Witty (1977:25) is "Woodland" in time and culture. It is made of sandstone and is 8.66 cm. long, 3.56 cm. wide and 1.95 cm. thick with a 2 mm groove. Therefore there could be a Cuesta or Butler component present. Additional support for this is indicated by a Butler phase chipped celt (8.9 cm. long, 5.45 cm. wide, 2.63 cm. thick), two Scallorn points, and a Langtry point reworked into a drill (4.57 cm. long, 3.24 cm. wide, 0.64 cm. thick). No pottery was found. It is located north of an old oxbow and on a slight rise, and covers 12,500 sq. meters with a light scatter within which there are three areas of concentration.

14GR623. This site is located in tract D-44 on a rise west of Fall River. It is Archaic of the El Dorado phase based on a Dustin point and a "wasp-waist" ax. The the ax is 10.02 cm. long, 6.28 cm. wide and 6.65 cm thick. There is also a corner-notched point

fragment that suggests Butler or Walnut phase, too, however, this is uncertain, and a gouge 9.25 cm. long, 5.04 cm. wide and 2.1 cm. thick is present. Finally, a Calf Creek-like point may indicate a Munkers Creek component too. The site covers 300 sq. meters.

14GR624. This site is located in tract D-53 on a rise north of an old bend in the river. The old oxbow is dry, however it still shows up on the aerial photographs. It contained remains of several phases: Chelsea, as indicated by a Dustin point, El Dorado by 2 Dustin points, and Early Ceramic (Butler or Cuesta) as suggested by a Scallorn, Gary and Synder point and a round endscraper. Finally, there is a drill made of a Lantry point (4.67 cm. long, 2.78 cm. wide and 0.9 cm. thick) and two triangular abraders. The site covers 3000 sq. meters.

14GR625. This site is located in tract D-49 and is of unknown cultural affiliation. There is the poll end of a chipped stone celt that suggests a Butler phase identity. The tool is 11.5 cm. long (inc.), 6.98 cm. wide and 3.16 cm. thick. Also found was a plano-convex endscraper. The site is on a terrace east of Fall River. Further investigation may show that 14GR625 and 14GR626 are parts of the same site. The scatter is light and covers 200 sq. meters.

14GR626. This site is also in tract D-49 and it is south of 14GR625. This site is further south on the same terrace. The site is a multi-component type with a Pomona phase suggested by one Pomona Ware sherd, a Huffaker point, and the center section of a diamond-beveled knife. A Butler component is suggested by a chipped celt (10.05 cm. long, 4.49 cm. wide and 2.7 cm. thick). A Munkers Creek

phase is suggested by a "Clear Creek" gouge made from an old ax fragment-- 6.7 cm. long, 4.1 cm. wide and 2.52 cm. thick. Finally, a Euro-American scatter is present. The site covers 1000 sq. meters with a moderate scatter.

14GR627. This site is in the northwest corner of tract D-51. It has a prehistoric occupation of unknown cultural affiliation. The site consisted of a light scatter of flint and one oval mano. The mano may indicate an Archaic assignment since it is reminiscent of Nebo Hill loaf manos from Kansas City. The site covers 25 sq. meters.

14GR628. This site is located in the NE $\frac{1}{4}$ of tract D-52 and has a prehistoric occupation of unknown cultural affiliation. It is on a rise east of the river and west of a dry bend in the river, and covers 1200 sq. meters with a light scatter of flint.

14GR629. This site is located in tract D-7 and consists of a Walnut phase based on a corner-notched point and a Euro-American scatter. There is also a finely flaked point base that could be either Gary or Langtry, which is Butler phase. The site is located on a terrace north and east of the river, and covers 3000 sq. meters with a moderate-heavy scatter.

14GR630. This site is located in tract D-7 directly south of site 14GR629. It has been called the Coop-Russell site. It is a multicomponent type with a Walnut, Munkers Creek and El Dorado phase representing the Archaic along with Butler, Pomona and Lower Walnut (Great Bend) phases representing the Ceramic periods. The Lower Walnut is marked by six Little River shell tempered sherds and maybe

two diamond-beveled knife fragments. Pomona is marked by 30 Pomona Ware sherds and two Washita and two Huffaker points. One plano-convex endscraper is present. Butler evidence is 10 limestone tempered sherds while El Dorado is represented by a Dustin and Duncan point. Finally, Walnut and Chelsea points and axes are present in private collections from the site. The site is located north of a bend in Fall River and covers the 20,000 sq. meters of area enclosed by the bend. Five 2-meter test squares were placed in it.

14GR631. This site is located in tract D-6 south of the confluence of Otter Creek and Fall River. The site is a prehistoric occupation. The only finished artifact is a point base. The point is made of a cream-white chert very similar to Burlington found in Missouri. The base is stemmed and was broken just at the shoulder. It is 2.47 cm. long (inc.), 2.24 cm. (at stem neck) and 0.75 cm. thick. It has basal and lateral grinding. Also found was a loaf-shaped mano. It's phase is unknown but Plano or Butler are suggested by a point base fragment which could be Scottsbluff or Langtry. The site covers 375 sq. meters of a terrace with a light scatter.

14GR632. This site is located in tract D-6 and is down river from site 14GR631. This site represents a prehistoric occupation of unknown cultural affiliation. Two triangular abraders were found though. It covers a terrace south of the river and east of the river with a very light flint scatter estimated at 900 sq. meters.

14GR633. This site is located in tract D-4 and is south of the river and east of our intermittent stream and covers an area of approximately 1000 sq. meters. It has an Archaic component of the El Dorado phase based on a Dustin point. Also the presence of a Langtry point suggests a Butler component.

14GR634. This site is located in tract D-4 and is a prehistoric occupation of unknown cultural affiliation. The site is small, 600 sq. meters, and it is covered with a light flint scatter.

14GR635. This site is located in tract D-2 and represents a prehistoric occupation of unknown cultural affiliation. The site is north of a tributary and west of Fall River. The site is located on a terrace and covers an area of 225 sq. meters with a very light flint scatter.

14GR636. This site is located in tract C-27 and is associated with the next 11 sites (14GR637-14GR646). It contains a limestone and flint scatter that covered 250 sq. meters. The site is a prehistoric occupation of unknown cultural affiliation.

14GR637. This site is in tract C-27 and represents a prehistoric occupation of unknown cultural affiliation based on a Pomona Ware sherd. The site is a concentration of limestone and flint covering 100 sq. meters.

14GR638. This site is in tract C-27 and represents a prehistoric occupation of unknown cultural affiliation. The site is a concentration of limestone and flint covering 150 sq. meters.

14GR639. This site is in tract C-27 and is a limestone and flint concentration covering 600 sq. meters. This site has an Archaic Chelsea phase component based on a "Chelsea" lanceolate point. There is also a Walnut component based on a corner-notched arrow point.

14GR640. This site is in tract C-28 and represents a prehistoric occupation of unknown cultural affiliation. The site consists of

a concentration of limestone and flint north of the Fall River and on a rise. It covers 2100 sq. meters.

14GR641. This site is in tract C-28 and represents a prehistoric occupation of unknown cultural affiliation. A badly battered and broken point may be a Lantry type, thus suggesting Butler phase. The site is a concentration of flint and limestone covering 400 sq. meters. The site is situated south of a tributary on a terrace.

14GR642. This site is in tract C-28 and represents a prehistoric occupation of unknown cultural affiliation. The site consists of an 800 sq. meter scatter of flint and limestone.

14GR643. This site is in tract C-28 and represents a prehistoric occupation of unknown cultural affiliation. The site consists of an 1000 sq. meter scatter of flint and limestone. It is situated north of Fall River and south of an intermittent stream.

14GR644. This site is located in tract C-28 and represents a prehistoric occupation of unknown cultural affiliation. The presence of a possible Scallorn point tip suggests a Walnut Archaic or Butler Early Ceramic component. The site consists of a flint scatter that covers 250 sq. meters. It is west of Van Horn Creek and north of an intermittent stream.

14GR645. This site is located on tract C-28 and represents a prehistoric occupation of unknown cultural affiliation. The site consists of a light scatter of flint and sandstone covering 200 sq. meters. It is west of Van Horn Creek, north of an intermittent stream and northwest of 14GR644.

14GR646. This site is located in tract C-28 and represents a prehistoric occupation of unknown cultural affiliation. The site consists of a light scatter of flint covering 600 sq. meters. The site is west of Van Horn Creek north of an intermittent stream and northwest of 14GR645.

Note: Sites 14GR636 through 14GR646 all seem to be related. All of the sites manifested the same pattern, i.e. they were all circular and the scatter contain flint and sandstone or limestone. All of the sites are subject to periodic inundation and have several inches of silt on them making identification and relocation of the sites difficult. It is possible they may represent a Pomona village.

16GR647. This site is located in tract C-46-1 and represents a Pomona phase occupation based on one Pomona Ware sherd and two Wahsita points. The presence of an El Dorado style drill, 4.66 cm. long (inc.), 1.69 cm. wide and 1.56 cm. thick suggests an El Dorado phase component also. It is located east of Van Horn Creek on a rise and covers 1200 sq. meters.

14GR648. This site is located in tract C-46-1 and is a prehistoric occupation at Pomona phase affiliation based on a Washita point. A plano-convex endscraper is present, too. The site is south of Van Horn Creek and north of site 14GR647. It covers 600 sq. meters with a light flint scatter.

14GR649. This site is located west of Van Horn Creek in tract C-46-1. It is an Archaic site of El Dorado phase based on a Duncan (?) point. It covers an area of 300 sq. meters with a light flint scatter.

14GR650. This site is located west of Van Horn Creek north of 14GR649 and in tract C-46-1. The site represents a prehistoric occupation of unknown cultural affiliation although a poorly polished groundstone celt was found. It covers an area of 625 sq. meters with a light flint scatter.

14GR651. This site is located in tract C-54 and is also referred to by some local collectors as the Watermelon Patch. The site represents a prehistoric occupation of unknown cultural affiliation, however a point tip and base suggest the Archaic period. The site is east of Van Horn Creek and covers an area of 800 sq. meters with a moderate scatter.

14GR652. This site is in tract C-54 and north of site 14GR651. The site represents a prehistoric occupation of unknown cultural affiliation. It is on a slight rise east of Van Horn Creek and covers an area of 1600 sq. meters with a light scatter.

16GR653. This site is located in tract C-18 and represents a prehistoric occupation of unknown cultural affiliation. It is on the northern shoreline of the lake during high water and is subject to wave action and periodic inundation. The site covers 20 sq. meters with a very light scatter of flint.

14GR654. This site is located in tract C-4 and represents a prehistoric occupation of unknown cultural affiliation. The site is on a hill top overlooking Casner Creek and covers 9 sq. meters with a very light scatter. The entire area has been impacted upon by a road and campsite.

14GR655. This site is located in tract D-27 and is on a terrace north of Otter Creek. The site is Pomona phase in affiliation based on a Huffaker and two Washita points and 16 Pomona Ware sherds. It covers the top of the terrace (5500 sq. meters) with a moderate to heavy scatter of pottery and flint. It is suggested by the scatter that the area may have contained several dwellings but only excavation could confirm this.

14GR656. This site is in tract D-28 and represents a prehistoric occupation of unknown cultural affiliation. The area of scatter was 75 sq. meters and very light.

14GR657. This site is located in tract D-28 on a rise east of Otter Creek and surrounded by the old channel of the creek. This site is a multi-component type with a Chelsea phase based on a lanceolate point, a Cuesta phase based on two Synders (?) points and four Cuesta Dentate Stamped sherds, a Pomona phase based on four Pomona Ware sherds and a Lower Walnut focus component of the Great Bend aspect based on four Great Bend potsherds and two "Scallorn" points. The site covers 5000 sq. meters with a heavy scatter of flint and pottery along with bone and shell.

14GR658. This site is located in tract D-23 on a rise south and east of Otter Creek. It is a multi-component site with an El Dorado phase suggested by a Duncan point, Butler phase represented by three limestone tempered sherds. There is also a Pomona phase represented by Washita and Huffaker points. Finally, a possible Cuesta phase is suggested by a plain sand tempered sherd and two wide projectile point tips. The site covers 2400 sq. meters with a heavy scatter.

14GR659. This site is located in tract D-22 south of a bend in Otter Creek. The site has an El Dorado phase represented by a Walnut Valley point and two Scallorn points as well as a Pomona suggested by a Washita point and a Sequoyah point. It covers an area of 1000 sq. meters with a moderate scatter.

14GR660. This site is located in tract D-22 and is located north of an intermittent stream and southwest of Otter Creek. It represents a prehistoric occupation of unknown cultural affiliation. The site covers an area of 105 sq. meters with a very light scatter.

14GR661. This site is located in tract D-22 on a very pronounced knoll west of Snake Creek and south of Otter Creek. It contains Archaic phases: Chelsea, Munkers Creek and Walnut. There are two "Chelsea" lanceolate points, one Munkers Creek knife and one Walnut corner-notched arrowhead. The Munkers knife is 15.28 cm. long, 3.97 cm. wide and 1.34 cm. thick. The site covers 4000 sq. meters with a moderate scatter.

14GR662. This site is located in tract D-22 west of Snake Creek south of 14GR661. This site covers 250 sq. meters with a light scatter and future investigation may show it to be part of 14GR661. This site is a prehistoric occupation of probably El Dorado phase affiliation based on a drill base. The drill is 3.52 cm. long (incomplete), 2.35 cm. wide and 0.73 cm. thick. Its only point base, a stemmed fragment, suggests this too.

14GR663. This site is located in tract D-17 on a rise west of Otter Creek. It represents a prehistoric occupation of El Dorado phase affiliation based on a "wasp-waisted" chipped ax. The scatter is light and

covers an area of 300 sq. meters. The chipped stone ax is 9.55 cm. long, 6.37 cm. wide and 3.0 cm. thick.

14GR664. This site is located in tract D-18 on a terrace that is west of Otter Creek. The site is a single component Pomona phase type based on two Pomona Ware sherds. A sandstone abrader fragment and plano-convex endscraper is present too. It is rather large, covering 18,000 sq. meters and has a thin scatter of flint, pottery and burnt rocks over its entirety.

14GR665. This site is located in tract D-18 north of 14GR664, south of a tributary and west of Otter Creek. It is on an elevated point of land and a light scatter of flint covers the entire 5000 sq. meters. The site represents a prehistoric occupation of unknown cultural affiliation.

14GR666. This site is in tract D-18 north of a tributary and 14GR665 and northwest of Otter Creek. It is a prehistoric occupation of unknown cultural affiliation. Point fragments suggest Archaic but none are diagnostic. The site covers 400 sq. meters with a light scatter.

14GR667. This site is in tract D-19 and directly under and east of an oil rig also south of Honey Creek. It is an El Dorado phase site based on a Dustin point and a "wasp-waisted" chipped stone ax 10.88 cm. long, 7.05 cm. wide and 4.05 cm. thick. It is on a terrace with a moderate scatter cover of 2100 sq. meters. A Chelsea phase may be represented by a "Chelsea" lanceolate.

14GR668. This site is in tract D-34 and is east of Honey Creek on a slight terrace. Two points were found: a Fresno and a Sequoyah.

No pottery was found but these points are associated with Ceramic periods either Pomona or Great Bend. The site covers 1000 sq. meters with a light to moderate scatter.

14GR669. This site is in tract D-14 and is located on a slight rise south of Otter Creek. This represents a prehistoric occupation of unknown cultural affiliation. It covers 600 sq. meters with a light scatter.

14GR670. This site is in tract D-14; it is west of 14GR669; and south of Otter Creek. This site represents a prehistoric occupation of unknown cultural affiliation, and covers 50 sq. meters with a light scatter.

14GR671. This site is in tract D-12 and is on a terrace north of Otter Creek. It is a prehistoric occupation dating to the Paleo-Indian Period since a drill base found at the site is a modified Dalton point. It is made of cream chert (non-local) and is 4.15 cm. long (incomplete), 2.4 cm. wide and 0.6 cm. thick. It has basal and lateral grinding. The site covers 1200 sq. meters with a moderate scatter. Also present is a gouge 7.53 cm. long, 3.46 cm. wide and 1.28 cm. thick, which looks as if it was made from a broken Munkers Creek knife. This suggests Munkers Creek affiliation too.

14GR672. This site is in tract D-12; it is north of Otter Creek and east of 14GR671. It is a Pomona phase site based on a small Pomona Ware potsherd along with a side-notched arrow point. The site covers 600 sq. meters with a light scatter.

14GR673. This site is in tract D-12; it is north of Otter Creek and north of 14GR672. The site is a prehistoric occupation of an

unknown cultural affiliation although a possible Gary point base suggests Butler phase or Cuesta. The site is on top of a terrace and covers 90 sq. meters with a light flint scatter.

14GR674. This site is in tract D-8 on a rise north of Otter Creek. It is an Archaic prehistoric occupation. The phase identification suggests Munkers Creek, because the two points found are a Calf Creek basal notched type and a reworked Calf Creek. Also present is a Munkers Creek ax 9.48 cm. long, 5.02 cm. wide and 2.45 cm. thick. The site covers 1000 sq. meters with a heavy to moderate concentration.

14GR675. This site is in Tract D-13 on a rise north of Otter Creek. The site represents a prehistoric occupation of possible Munkers Creek affiliation as suggested by a point tip and a "possible" Munkers Creek knife tip. The site covers 3740 sq. meters with a light-moderate scatter of flint.

TABLE 2
Projectile Points from Fall River

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Point Type</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR603	3.37 inc	1.9	0.84	Dustin	Cream-Rose	Yes
14GR603	4.27 inc	1.87	0.74	Dustin	Cream-L. Grey	No
14GR603	8.23	2.5	0.98	Munkers Creek	L. Grey*	No
14GR605	5.89	2.73	0.99	Duncan?	Cream	No
14GR606	4.3 inc	1.3	0.74	"Chelsea" Lan.	L. Grey*	No
14GR607	2.53	1.48	0.36	Walnut Valley	Rose	Yes
14GR607	1.58 inc	1.1	0.28	?	Grey*	No
14GR607	1.66	1.2	0.28	Washita	Rose	Yes
14GR607	1.41 inc	1.01	0.28	Washita	L. Grey*	Yes
14GR608	2.1 inc	1.5	0.4	Fresno	Rose	Yes
14GR608	3.2 inc	3.0	0.63	Gary	Grey*	No
14GR608	3.0 inc	3.35	0.70	Lantry	L. Grey*	No
14GR608	4.1 inc	3.35	0.78	Marcos	Grey	No
14GR608	3.05 inc	2.8 inc	0.62	Marcos	Grey*	Yes

+ basal and lateral grinding

* Florence chert ** Foraker chert

TABLE 2 (continued)

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Point Type</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR608	4.6 inc	2.56	0.75	Marcos	Grey**	No
14GR609	2.07 inc	1.15	0.2	Reed	L. Grey*	No
14GR609	4.2 inc	3.12	0.64	Marcos	L. Grey*	No
14GR617	3.24 inc	2.34	0.71	Lantry	L. Grey*	No
14GR618	4.99	2.4	0.99	Hell Gap	Greyish Silaneous	No
14GR618	6.09 inc	3.45	1.04	"Chelsea"	Lan. L. Grey-Yellow*	No
14GR618	4.5 inc	3.04	1.01	"Chelsea"	Lan. L. Grey*	No
14GR618	5.84	2.44	0.83	"Chelsea"	Lan. L. Grey**	No
14GR618	4.4 inc	3.5	0.85	"Chelsea"	Lan. D. Rose	Yes
14GR618	3.88 inc	3.05 inc	1.08	"Chelsea"	Lan. Whitish	No
14GR618	7.3	2.79	1.20	"Chelsea"	Lan. L. Grey*	No
14GR618	4.96	2.44	1.07	Chelsea S-N	L. Rose*	Yes
14GR618	5.59 inc	2.0	0.8	Dustin	L. Grey-Yellow	No
14GR618	4.8	1.9	0.6	El Dorado	L. Grey**	No
14GR618	2.4	2.1	0.4	Walnut Valley	L. Grey*	No

TABLE 2 (continued)

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Point Type</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR619	5.7 inc	2.6	0.7	Gary?	Yellow- Grey*	No
14GR620	2.75 inc	2.69	0.84	Dustin	Grey*	No
14GR620	5.55 inc	2.44	0.84	Dustin	L. Grey**	No
14GR620	4.56	1.82	0.60	Dustin	Grey*	No
14GR620	3.1	1.88	0.69	Sh. C-N Arrow	Pink*	Yes
14GR621	1.69	1.06	0.22		Whitish	Yes
14GR622	1.78 inc	1.24	0.3	"Scallorn"	L. Pink	Yes
14GR622	2.05 inc	1.5	0.38	"Scallorn"	Grey*	No
14GR622	3.97 inc	1.82	0.72	Dustin	L. Grey*	No
14GR622	3.4 inc	2.5	0.82	Duncan	Yellow- Grey	No
14GR622	3.2 inc	2.33	0.88	Duncan	D. Rose	Yes
14GR622	4.6	3.04	0.94	C-N Dart	Cream	No
14GR623	2.6 inc	3.48 inc	0.92	C-N Dart	L. Grey	No
14GR623	4.7	2.22	0.73	Dustin	Grey**	No
14GR623	5.86 inc	3.4 inc	0.8	Calf Ck?	Cream	No

TABLE 2 (continued)

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Point Type</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR624	3.24 inc	3.06	0.92	"Chelsea" Lanc.	Grey*	No
14GR624	3.86 inc	2.1	0.66	Dustin	Grey**	No
14GR624	3.99	1.74	0.69	Dustin	Grey*	No
14GR624	2.75 inc	1.87	0.42	Scallorn	Pink*	Yes
14GR624	10.08 inc	4.82	0.89	Synder	Grey*	No
14GR624	3.4 inc	3.0	0.68	Gary?	Yellowish?	
14GR626	2.47	1.07	0.23	Huffaker	D. Grey	No
14GR629	2.02 inc	2.37	0.56	C-N Arrow	L. Grey*	No
14GR629	7.44 inc	3.38	0.88	Gary- Lantry?	Rose*	Yes
14GR630	1.96 inc	1.46	0.29	Huffaker	L. Grey*	No
14GR630	1.04 inc	1.31	0.28	Huffaker	Grey*	No
14GR630	2.0 inc	1.24	0.2	Washita	Grey*	No
14GR630	1.53 inc	1.1 inc	0.23	Washita	L. Rose*	Yes
14GR630	3.0 inc	1.75	0.91	Dustin	L. Grey**	No

TABLE 2 (continued)

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Point Type</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR630	3.7 inc	3.03	0.81	Duncan?	L. Grey*	No
+ 14GR631	2.47 inc	2.47 inc	0.75	Scottsbluff or Lantry	White	No
14GR633	3.7 inc	2.35	0.78	Dustin	D. Rose*	Yes
14GR633	3.25 inc	3.17	0.6	Lantry	Rose*	Yes
14GR639	2.65 inc	2.23 inc	0.64	"Chelsea" S-N	L. Grey*	No
14GR639	3.48 inc	2.49	0.59	C-N Arrow	L. Grey*	No
14GR641	4.24 inc	3.9 inc	0.66	Lantry?	L. Grey*	No
14GR647	1.69 inc	1.38	0.26	Washita	Yellow	No
14GR647	1.32 inc	1.46	0.26	Washita	White	No
14GR647	2.06 inc	1.14	0.33	Scallorn?	Rose	Yes
14GR648	1.8 inc	1.36	0.34	Washita	Rose	Yes
14GR649	4.56	1.97	0.48	Duncan?	Grey*	No
14GR655	2.8	1.5	0.41	Huffaker	L. Rose*	Yes
14GR655	1.74	1.28	0.25	Washita	L. Rose*	Yes
14GR655	1.98	1.4	0.19	Washita	L. Rose*	Yes

TABLE 2 (continued)

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Point Type</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR655	1.93	1.67	0.27	Side-Notched	L. Grey*	No
14GR657	7.14	3.92	0.73	Synder?	Pink**	Yes
14GR657	6.25	3.68	0.79	Synder?	L. Grey*	No
14GR657	3.23	inc 2.06	0.59	"Chelsea" Lanc.	Yellow	No
14GR657	1.3	inc 1.02	0.21	"Scallorn"	Grey	No
14GR657	2.98	1.3	0.32	"Scallorn"	Grey	No
14GR658	1.1	inc 1.36	0.3	Washita	Grey*	No
14GR658	2.26	inc 1.3	0.34	Huffaker	L. Grey*	No
14GR658	6.52	2.02	0.84	Duncan	L. Grey*	No
14GR659	2.25	inc 1.05	0.27	Sequoyan	Pink**	Yes
14GR659	1.36	inc 1.44	0.39	Scallorn	L. Grey*	No
14GR659	1.00	inc 1.14	0.22	Huffaker	Cream	No
14GR659	4.5	inc 2.69	0.89	Corner-Notched	L. Grey**	No
14GR659	3.64	inc 2.67	0.8	Dustin	L. Grey*	No
14GR659	4.74	2.44	0.48	Corner-Notched	L. Grey*	No
14GR661	1.98	inc 2.05	0.64	"Chelsea" Lanc.	Cream	No

TABLE 2 (continued)

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Point Type</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR661	3.74 inc	2.00	0.79	"Chelsea" Lanc.	Yellow	No
14GR661	2.00 inc	3.74 inc	0.55	C-N Dart	Pink	Yes
14GR667	3.93	2.11	0.86	Dustin	L. Grey*	No
14GR667	3.45 inc	2.3 inc	1.00	"Chelsea" Lanc.	L. Grey*	No
14GR668	2.75 inc	1.1	0.26	Sequoayah	L. Grey	No
14GR668	2.39 inc	1.2	0.3	Fresno	Pink	Yes
14GR672	1.84 inc	1.46	0.38		L. Grey*	No
14GR674	5.0 inc	4.2	1.0	Calf Ck.	L. Grey*	No
14GR674	4.48 inc	3.06 inc	0.82	Reworked	L. Pink*	Yes
14GR313	6.46 inc	3.77	0.77	"Synder"	L. Rose*	Yes
14GR313	5.00	3.2	0.84	"Synder"	Grey*	No
14GR313	2.3 inc	2.71	0.67	C-N Dart	L. Grey**	No
14GR313	4.8 inc	2.09	0.8	Dustin	Grey	No
14GR313	4.4	2.02	0.69	Dustin	Pink to L. Grey*	Yes

TABLE 3
Endscrapers from Fall River

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Type</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR604	4.98	4.33	1.58	Round	Grey Mottled Orange	No
14GR608	3.2	2.04	0.74	Plano-Convex	Grey*	Yes
14GR611	2.86	1.86	0.74	Plano-Convex	Ochre	Yes
14GR624	4.6	4.58	1.05	Round	L. Grey*	No
14GR625	4.7	2.5	1.02	Plano-Convex	L. Grey*	No
14GR630	3.37	2.3	0.85	Plano-Convex	L. Grey*	No
14GR648	4.41	2.17	0.79	Plano-Convex	Rose	Yes
14GR658	4.1	1.98	0.7	Plano-Convex	L. Grey*	No
14GR661	2.98	2.38	0.42	Plano-Convex	L. Grey*	No
14GR664	3.18	2.1	0.7	Plano-Convex	Yellowish*	No
14GR675	3.06	1.88	0.59	Plano-Convex	Pink-Rose*	Yes

* Florence chert

TABLE 4

Groundstone Tools from Fall River

<u>Site No.</u>	<u>Artifact</u>	<u>Material</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>
14GR604	Ax Bit	Limonite	10.7 inc	10.89	3.28
14GR604	Triangular Abrader	Limonite	13.3	7.04	1.7
14GR618	Rectangular Abrader	Sandstone	8.46	6.31	4.15
14GR618	Ovoid Mano	Burnt Limestone	11.3	10.9	3.8
14GR624	Triangular Abrader	Limestone	12.43	7.52	1.82
14GR624	Triangular Abrader	Limestone	11.42	8.54	2.79
14GR627	Oval Mano	Quartzite L. Pink	12.93	9.99	3.62
14GR629	Triangular Abrader	Limestone	9.36 inc	7.46	2.13
14GR631	Loaf Mano	Sandstone	5.67 inc	8.34	4.32
14GR632	Triangular Abrader	Limestone	10.4 inc	7.8	2.89
14GR632	Triangular Abrader	Limestone	15.3	10.37	3.83
14GR650	Celt	Green Quartzite	11.25	5.62	3.42
14GR655	Triangular Abrader	Burnt Limestone	8.7	6.91	1.58
14GR657	Loaf Mano	Sandstone	9.3 inc	9.95	3.76
14GR661	Triangular Abrader	Burnt Limestone	10.8	4.92	1.96

TABLE 4 continued

<u>Site No.</u>	<u>Artifact</u>	<u>Material</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>
14GR664	Triangular Abrader	Limestone	9.35	7.07	2.29
14GR666	Rectangular Abrader	Sandstone	9.56 inc	7.6	4.52
14GR674	Rectangular Abrader	Sandstone	4.3 inc	6.85	2.82
14GR675	Abrader	Sandstone	11.3	4.3	3.36

TABLE 5
Bifaces from Fall River

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR603	3.3	1 ^{nc}	2.33	0.74	Cream
14GR603	5.15	2.33	0.78	Cream-rose	No
14GR605	6.0	2.42	1.18	D. Cream	Yes
14GR607	2.4	1 ^{nc}	2.09	0.36	D. Cream
14GR607	3.2	1 ^{nc}	2.15	0.56	D. Cream
14GR608	2.9	1 ^{nc}	2.88	0.66	L. Grey*
14GR608	9.2	2.93	3.13	Grey*	No
14GR610	2.7	1.5	0.7	L. Grey*	No
14GR610	6.45	3.56	1.9	Grey*	Yes
14GR618	6.21	3.33	1.74	Cream	No
14GR618	5.3	1 ^{nc}	3.53	1.03	D. Rose*
14GR618	5.52	2.66	1.08	Whitish	Yes
14GR618	3.77	2.07	0.76	Grey*	No
14GR622	5.7	3.74	1.19	Grey*	No

* Florence chert

TABLE 5 (continued)

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Chert</u>	<u>Heat Treated</u>
14GR623	8.36	inc 2.94	0.78	Grey	Yes
14GR624	6.72	2.75	2.12	L. Grey**	No
14GR624	5.97	inc 5.48	1.71	L. Grey*	No
14GR624	6.44	inc 4.0	1.08	Pink*	Yes
14GR626	5.08	inc 5.06	2.2	L. Yellowish	Yes
14GR629	6.2	inc 6.16	1.37	L. Grey*	No
14GR629	2.19	inc 1.88	0.47	L. Grey*	No
14GR630	7.27	inc 5.3	1.77	L. Yellowish*	No
14GR636	5.72	4.06	1.97	L. Grey	No
14GR639	5.5	inc 3.39	1.96	D. Ochre	?
14GR639	3.8	inc 2.8	0.56	L. Pink	Yes
14GR639	3.64	1.97	0.8	Pink	Yes
14GR639	5.84	4.3	1.13	L. Grey*	No
14GR655	4.64	inc 2.7	0.48	L. Pink*	Yes

TABLE 5 (continued)

<u>Site</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Chert</u>	<u>Heat</u>	<u>Treated</u>
14GR657	4.97	2.03	0.45	Rose	Yes	
14GR657	2.96 inc	3.0	0.76	L. Grey*	No	
14GR657	3.8	2.14	0.5	Rose*	Yes	
14GR657	6.9 inc	5.1 inc	1.5	Rose*	Yes	
14GR668	2.14 inc	1.8	0.63	L. Grey*	No	
14GR670	4.66 inc	3.56	1.0	Pinkish*	Yes	
14GR674	6.37	3.78	1.48	Creamish	No	

TABLE 6
Cultural Materials Recovered at Fall River

TABLE 6
Cultural Materials Recovered at Fall River

		Worked Chert	Animal Bone	Butler Ware	Pomona Ware	Endscraper Fragments	Crude Chopping Tools	Sandstone Mano Fragments	Biface Fragments (thin)	Biface Fragments (thick)	Dart Bases	Dart Point Tips	Arrow Point Tips	Drill Bit Fragments	Sandstone Abraders	Faceted Limestone	Chert Hammerstone
14GR620	25	1	2	-	-	-	-	-	-	1	1	-	-	6	-		
14GR621	14	-	-	7	-	-	-	1	-	-	-	1	-	-	1	-	
14GR622	4	1	-	-	-	4	-	2	3	2	1	2	-	-	-	-	
14GR623	14	-	-	-	-	-	1	2	2	-	1	-	-	-	-	1	
14GR624	11	-	-	-	-	-	-	1	2	-	1	-	-	-	-	-	2
14GR626	9	-	1	-	1	1	-	1	-	-	-	-	-	1	-	-	-
14GR628	2	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
14GR629	5	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
14GR630	16	3	10	30	1	-	1	2	-	2	3	-	-	-	-	-	-
14GR631	14	1	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-
14GR632	14	1	-	-	-	-	1	1	2	-	-	-	-	-	-	-	-
14GR633	4	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-
14GR634	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR635	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
14GR636	9	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-
14GR637	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-
14GR638	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR639	4	-	-	-	-	-	1	1	1	-	-	1	-	-	-	-	-

TABLE 6
Cultural Materials Recovered at Fall River

	Worked Chert	Animal Bone	Butler Ware	Pomona Ware	Endscraper Fragments	Crude Chopping Tools	Sandstone mano Fragments	Biface Fragments (thin)	Biface Fragments (thick)	Dart Bases	Dart Point Tips	Arrow Point Tips	Drill Bit Fragments	Sandstone Abraders	Faceted Limestone	Chert Hammerstone
14GR640	3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
14GR641	2	-	-	-	-	-	-	2	-	-	1	-	-	-	1	-
14GR644	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
14GR645	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
14GR647	4	-	-	1	-	-	-	1	-	-	1	1	-	-	-	-
14GR648	10	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR650	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR651	22	-	-	-	-	-	-	-	-	1	1	-	-	-	1	-
14GR652	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR653	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR654	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR655	17	-	-	16	1	1	-	-	-	-	-	2	-	-	3	-
14GR656	19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR657	16	37	-	-	1	3	-	-	-	1	2	-	-	-	2	-
14GR658	16	1	3	-	-	-	-	3	-	-	2	-	-	-	-	1
14GR659	3	-	-	-	-	-	-	3	-	1	-	1	-	-	-	-
14GR661	3	-	-	-	-	1	-	2	2	1	1	-	1	-	-	-
14GR662	4	-	-	-	-	-	-	-	1	1	1	-	-	2	-	-

TABLE 6
Cultural Materials Recovered at Fall River

	Worked Chert	Animal Bone	Butler Ware	Pomona Ware	Endscraper Fragments	Crude Chopping Tools	Sandstone Mano Fragments	Biface Fragments (thin)	Biface Fragments (thick)	Dart Bases	Dart Point Tips	Arrow Point Tips	Drill Bit Fragments	Sandstone Abraders	Faceted Limestone	Chert Hammerstone
14GR663	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14GR664	3	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
14GR665	11	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
14GR666	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
14GR667	13	1	-	-	-	1	-	1	1	-	2	-	1	-	2	-
14GR668	5	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
14GR669	7	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-
14GR670	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
14GR671	7	-	-	-	-	-	-	-	-	-	1	-	-	-	2	1
14GR673	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-
14GR674	6	1	-	-	-	-	1	1	1	-	1	-	-	-	-	-
14GR675	7	1	-	-	-	-	-	1	-	1	1	-	-	-	-	-
14GR313	1	1	1	-	-	-	-	-	1	-	-	-	-	1	-	-

14GR630 TESTING:

The scope of work provided for some limited testing to determine the extent of a site (presumably those in situations of extensive ground cover where site size could not be easily determined), and/or to determine site depth for special reasons.

Since site size could be determined in the majority of cases, only one site, 14GR630, was tested. This site was the largest and had the greatest quantity of artifacts found in the reservoir. It was occupied from the Archaic through to proto-historic Wichita times. Additionally, the tenant, Mr. Russell indicated the area was extensively eroding the past few years.

The site is located on the north bank of Fall River, near its junction with Otter Creek. It is at elevation 960 feet, in a large level wheat field. River elevation around the field is 950 feet.

Surface scatter extends 200 meters along an east-west axis, and 100 meters north-south. It includes chert flakes, bone, shell, burnt limestone and rough rock. Artifacts include projectile points and pottery of a number of phases: Walnut, Munkers Creek and El Dorado Archaic phases, Butler, Pomona and Lower Walnut Ceramic phases.

Excavation:

The site was tested with four 2 meter squares by a crew of three. Square A was at the Southern end of the site, B at the northern end, C at the northwest edge, and D in the west-central area (Fig. 8).

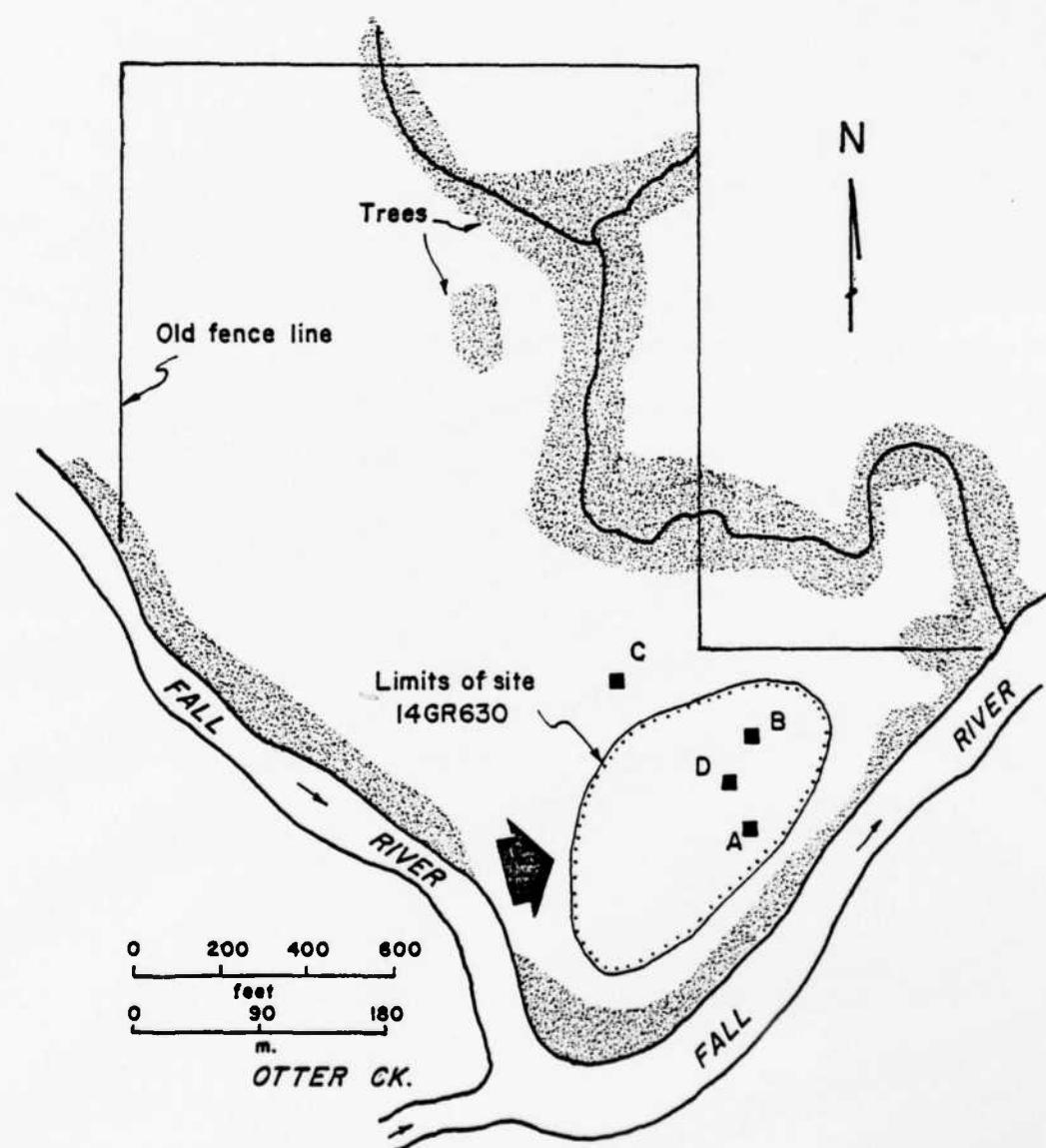


Figure 8

Map of site 14GR630 showing test squares A through D,
and the large arrow indicates the direction of
Fall River when it floods the field

Unit A was opened to the 0-20 cm. level and a hearth was encountered in the south half. Test A', a 2-meter square to the south of A was opened to completely expose the feature. The feature was a hearth with much burnt limestone and charcoal. All the soil in it was removed for flotation. The hearth was approximately 1.80 meters in diameter and was about 23 cm. deep.

Unit B was opened in two levels, 0-20 cm. and 20-40 cm. Very little material was found in the second level.

Unit C was opened fully to the 0-20 cm. level while only the southern half was taken down 20-40 cm. Nothing was found in the test; it was outside the site.

Unit D was excavated in two levels, 0-20 cm. and 20-40 cm. Some animal bone was present in the lower level.

Unit Contents:

Unit A, 0-20 cm: five mussel shell fragments, four snail shells, one chert chip and one potsherd (limestone tempered and cord-roughened). Unfortunately, we cannot establish if the sherd belongs to the hearth because the area was plowed. In the southern half of the square was feature #1, a hearth. It measured one meter north-south and 1.8 meters east-west, and was 23 cm. deep. It contained 470 grams of burnt limestone.

From the feature came 19 snail shell fragments, two mussel shell fragments, two deer teeth, one deer bone fragment and one chert chip.

Unit A' was opened to reveal the southern half of feature #1. In this square it measured .80 meters north-south, and 1.6 meters east-west. It contained 729 grams of burnt limestone, and 14 mussel shell fragments, nine snail shell fragments, two chert chips and one mammal

bone fragment.

Unit B, 0-20 cm.: 15 mussel shell fragments, seven snail shells, 13 mammal bone fragments, four chert chips and one Pomona rimsherd. From 20-40 cm: eight mussel shell fragments, one snail shell, one hammerstone and one Pomona potsherd. A probe to one meter yielded 13 turtle bone fragments, and revealed a soil color change from light brown to tan.

Unit C yielded nothing, and was abandoned after 20 cm.

Unit D, 0-20 cm.: 15 mussel shell fragments, two chert chips, four fragments of animal bone (one charred), and two potsherds (one Pomona ware and one Butler phase limestone tempered). From 20-40 cm., south half: 21 mussel shell fragments, three snail shells, and one mammal bone fragment.

Materials recovered:

Animal Bone: Most of the bone is mammalian, and was very fragmentary. When identifiable, it is predominantly deer with one possible bison fragment. Turtle bones were from the bellyplate but species identification is not possible.

Gastropods: All forms are terrestrial. Those large enough to be recovered without flotation are Anguispira alternata alternata. They are adapted to both uplands and plains, and are known to be prevalent on the flood plain of Fall River (Leonard 1959: 130).

Three other species were discerned after flotation of soil samples taken from the hearth: Euconulus chersinus, found on moist forest floors (ibid: 111); Carychium exile and Carychium exiguum, which prefer marshy environments, and are part-time aquatics (ibid: 194). Another unidentified species is also present.

Mollusca: Thirty-one identifiable mussel shells were recovered at the site. There were 13 left valves and 13 right valves of Crenodonta peruviana costata (Murray and Leonard 1962: 47-49). They came from test units A, B and D. There were also four right valves and one left valve of Lasimigona costata (*ibid*: 85-87). They too came from tests A, B and D.

Flora: All evidence is from floated weed seeds. No more than four specimens of each type was found. Species included: Stinkgrass (Eragrostis cilianensis); Prostrate or Spiney Pigweed (Amaranthus retroflexus or spinosa); Green Foxtail, both specimens charred (Setaria viridis); Perennial Sow Thistle (Sanchus arvensis); and Stringing Nettle (Urtica dioica).

Ceramics: There were five potsherds found within the test squares. Two were limestone tempered and cord-marked; they are Butler phase sherds. Three were grog tempered and cordmarked, and include one rim-sherd. They are Pomona phase ceramics.

Chipped stone: Nine flakes were found before flotation. Four were orange-tan; four were fossiliferous and gray; and one was white-brown. Most of the small flakes found after flotation were either pinkish heat-treated flakes, or whitish flakes.

Conclusions:

The site tests were a disappointment. The dense surface scatter suggested much more subsurface material. Soil erosion from the July, 1976 flood may have removed much of the site, and erosion continues to occur according to Mr. Russell, the tenant. That event explains the mix of Archaic to proto-Wichita materials found

on the surface as well as the absence of small size debris. The evidence of a hearth suggests potential subsurface structures or pits.

Given the potential continued erosion of the site and the removal by flooding of its midden, a program of salvage for this site might be proper. Although the tests extended 40 cm. below the surface, most of the material is concentrated in the upper 30 cm. Since 20 cm. of that is plow zone, at the most, 10 cm. of undisturbed material is present. In the light of the potential for subsurface features, a removal of the plow zone with a roadgrader to isolate them might be a useful strategy. Hearths and storage pits from the Archaic to proto-Wichita periods would yield invaluable subsistence and ecological data.

SHORELINE SURVEY:

The shoreline of Fall River Lake was examined to determine if any sites were eroding from it. The survey included the lower part of Fall River proper from Otter Creek to the lake. Figure 9 indicates the conditions of the banks allowing one to ascertain where erosion, deposition or stability occur. No sites were found on this part of the survey. The upper part of Fall River from Otter Creek to Highway 99 was not surveyed because the water was too shallow to get up it in a boat.

ISOLATED FINDS:

Occasionally isolated artifacts, usually projectile points, were found during the survey. These artifacts were collected and their location was noted. Exact data on their location is given in the background tract report. None of them were imports nor other unusual types; they are related to the known complexes in the area.

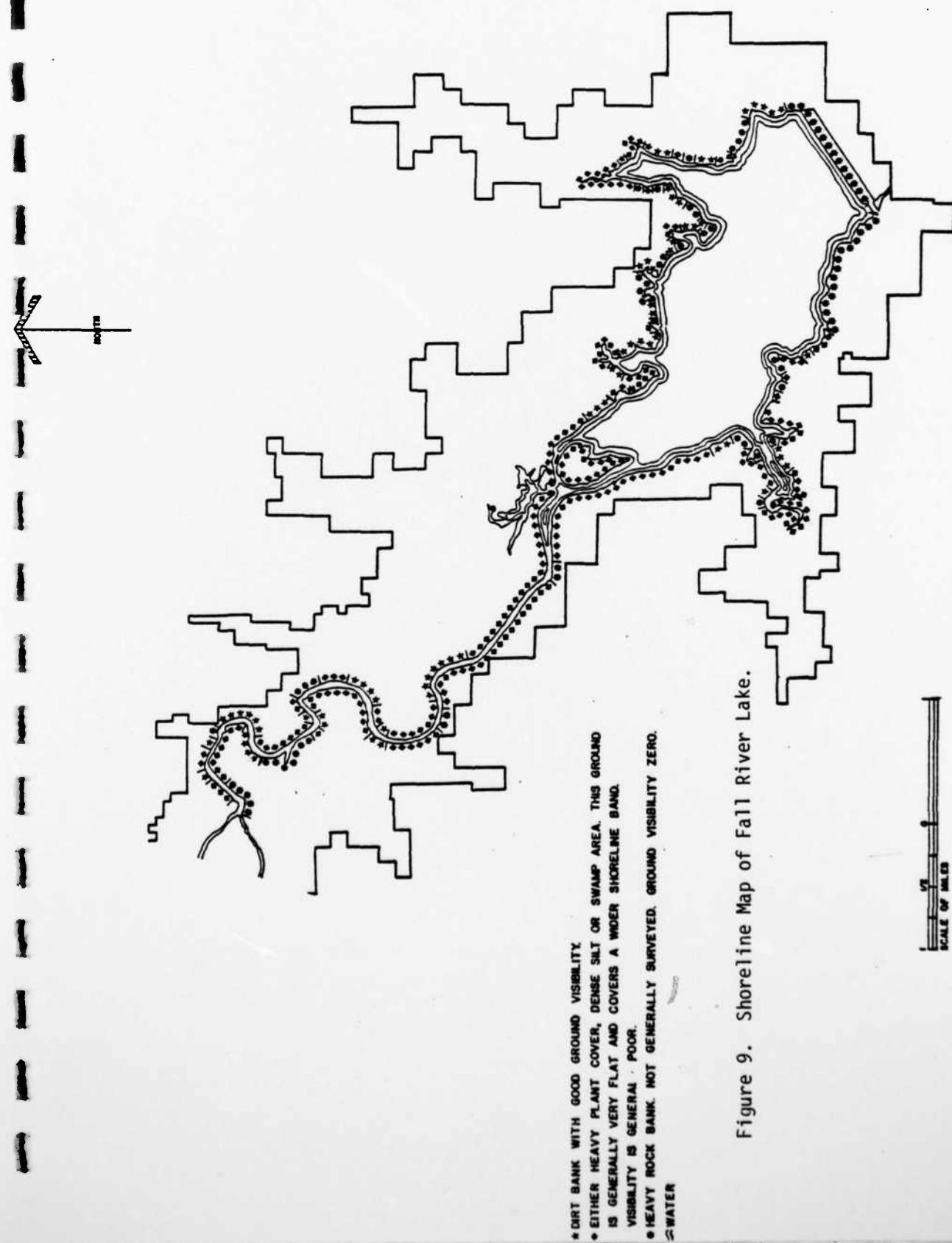


Figure 9. Shoreline Map of Fall River Lake.

VII

HISTORIC CULTURAL RESOURCES IN FALL RIVER LAKE

In terms of material culture Fall River Lake broadly speaking has three classes of historic cultural resources: historic archeological sites, contemporary structures pre-dating the construction of the reservoir, and contemporary structures built in connection or association with the reservoir. We will report in detail on the first two types. The last type will not be discussed since the records documenting their use, construction, cost, location, etc. are extensive. These structures include the dam itself, Corps offices, sheds, buildings, camp ground facilities, etc. all of which are a by-product of the completion of the reservoir.

While many E. O. 11593 surveys done on federal land focus on pre-historic archeological remains as we have done in the previous chapter most do not consider the "historic" remains in such lands. This study will include a report of such remains inspite of the fact that we are neither historians nor architect/engineers. This is done (1) because these remains are cultural resources under the law. Also (2) while we are not experts in these fields of study as archeologists we know what an archeological site is be it historic or prehistoric while the typical historian has neither archeological expertise nor interest in the use of such data. Since the spirit of the laws protecting cultural resources does so on the grounds that the general public can

appreciate and understand the humanistic and scientific value of them, it follows that one need not be a bridging engineer to appreciate both the aesthetic and structural simplicity of the steel girder bridges of rural Kansas. So too, one need not be a professional historian to know that these data are essential to a history of rural transportation, taxation, community resource allotment, etc. Certainly for these reasons the data should be recorded! (3) While we perform no detailed analysis of the families who owned these farmsteads or of the artifacts found at them (the glass, nails, nuts, bolts, screws, crockery, etc. can still be purchased today in stores in the area), their location is important since they form the data base for studies of 20th century rural life which will be done in the 21st century and beyond. Indeed, the research problems and foci for them have not even been thought of yet. They represent data in the bank so to speak. (4) Finally, because of their youth (33 years since their abandonment) they are not eligible for placement on the National Register of Historic places since they are less than 50 years of age. But inspite of that they are recorded on the assumption that an executive order survey is only done once and not at 50 year intervals allowing for re-evaluations of these resources.

Historic archeological sites are the remains, most especially, of the late 19th and 20th century Euro-American use of the land. Most are farmsteads, and are represented by building foundations, root cellars and wells (Fig. 10) of the people who lived in the valley before the reservoir's construction removed them from the land.

Pre-1947 contemporary structures are essentially bridges, culverts and roads. Because the reservoir land was for all practical purposes

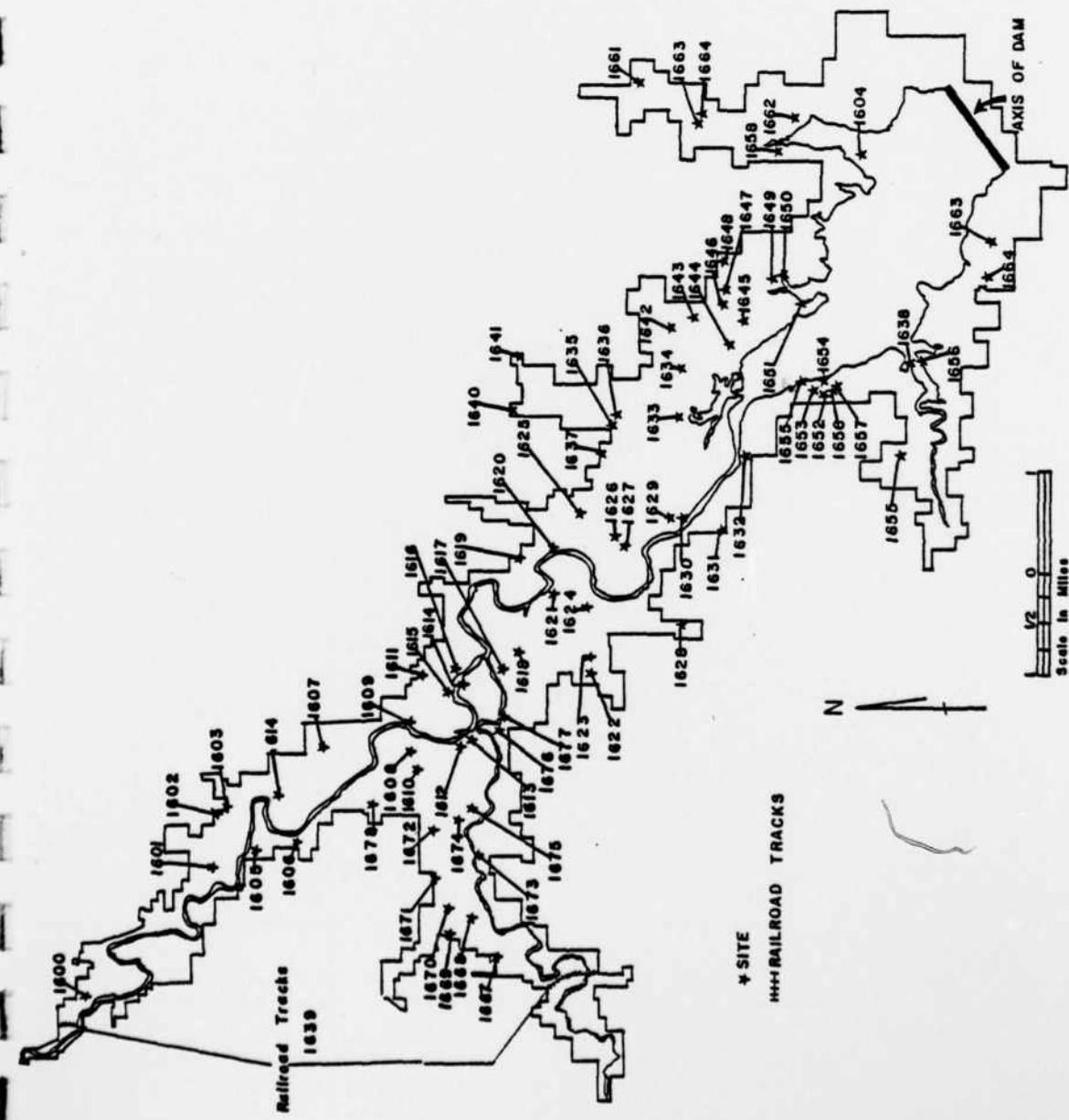


Figure 10. Map of Historic Sites in Fall River Lake.

cleared of all standing structures, the only remaining pre-dam facilities were some of the original bridging. While some roads belong to this period they will not be documented in this study since they are an integral part of the modern use of the reservoir lands. The bridging however is another matter since some are both historically and architecturally interesting (Figure 11).

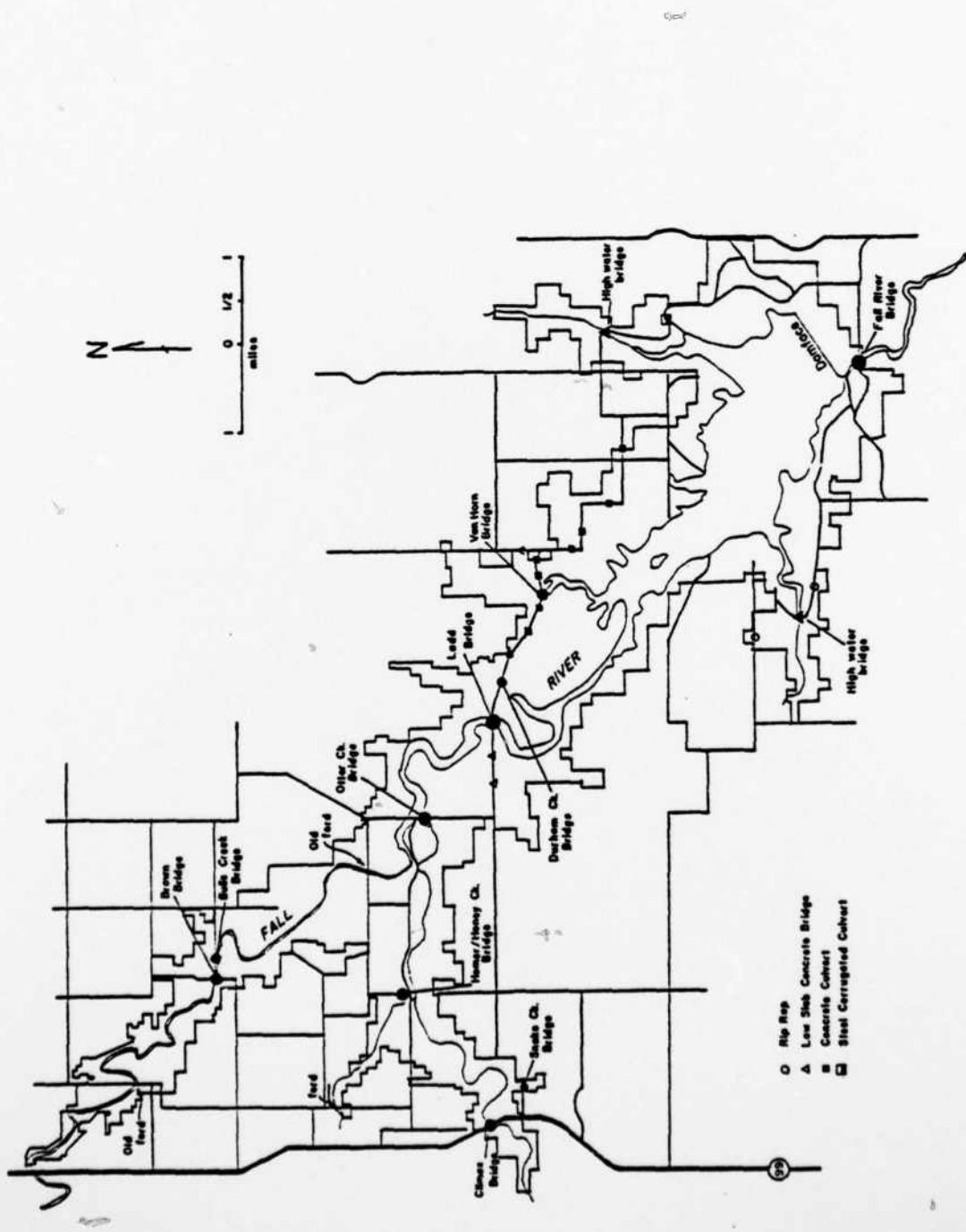


Figure 11. Map Showing the Location of pre-1947 bridging structures.

ARCHEOLOGICAL SITES:

The following is a brief description of all the historic sites found in the reservoir area. The reader is reminded they were "created as archeological sites in 1947 excluding a few exceptions. Official State of Kansas Site Survey forms have been completed on all of them. In many cases information on them is derived from the actual owners of the land in 1947 who were still farming in Fall River in 1979 or their descendants or their neighbors.

14GR1600. This site is located in tract D-97-1. This historic site consists of three foundations and a well. The area involved is approximately 100 sq. meters.

14GR1601. This site is located in tract D-81. This historic site has two parts. In the center of D-81 are two graves in an unplowed square of land about 25 sq. meters in size. Then down by the river is the headstone. The stone says: "Maria E. Hitchcock and Marvetta Hallett Both drown while crossing Fall River, Feb. 24, 1871 buried by Charles Hallett"

14GR1602. This site is located in tract D-83. It is the old location of the Hallett cemetery. The graves were all relocated during construction of the reservoir.

14GR1603. This site is located in tract D-83. This historic site consists of eight cement foundations and two wells. These are the remains of the Brown Farm. Across the road is a silo probably associated with the foundations. The entire complex covers approximately 10,000 sq. meters.

14GR1604. This site is in tract A-14, and is the former location of the Ecks-Donart cemetery which was moved during dam construction. Today the site is permanently inundated.

14GR1605. This site is located in tract D-86. This historic site contains a limestone foundation which is about 50 sq. meters in size.

14GR1606. This site is located in tract D-68. This historic site contains a foundation, a cellar and a well. All of these are made of limestone and cover an area of about 100 sq. meters.

14GR1607. This site is located in tract D-63. This historic site contains only a hand dug well and a light historic scatter which covers 40 meters.

14GR1608. This site is located in tract D-44. This historic site contains a foundation and a light historic scatter, covering an area of 120 sq. meters.

14GR1609. This site is located in tract D-47. This historic site contains a house foundation and covers an area of 150 sq. meters.

14GR1610. This site is located in tract D-54. This historic site contains the foundation of school #12 and covers 1 acre.

14GR1611. This site is located in tract D-49. This historic site contains three limestone foundations and a piled stone fence. It covers an area of 100 sq. meters.

14GR1612. This site is located in tract D-52. This historic site contains a limestone foundation which covers approximately 100 sq. meters.

14GR1613. This historic site is located in tract D-9 and consists of two cement foundations. The foundations and historic scatter cover 150 sq. meters.

14GR1614. This historic site is located in tract D-13 and is the remains of the town of Twin Falls. There are several foundations (4-5) and two wells. The historic scatter and foundations cover 3000 sq. meters.

14GR1615. This historic site is in tract D-51 and consists of a silo. This silo may be part of the Coop farm (14GR1616) further to the east. The site covers 5 sq. meters.

14GR1616. This historic site in tract D-51-2 is the old Coop farm. The farm site has two foundations (cement), a cellar and a well. The foundations and the historic scatter cover 250 sq. meters.

14GR1617. This site is in tract D-6 and consists of a single foundation which covers 50 sq. meters.

14GR1618. This site is in tract D-6 and consists of a foundation, and a well. The foundation and scatter cover an area of 50 sq. meters.

14GR1619. This site is in tract C-53 and consists of a cement foundation, a cellar and a well. The site and scatter cover 110 sq. meters.

14GR1620. This site is in tract C-51 west of Fall River on the terrace top. The site consists of three foundations and a cellar covering an area of 1000 sq. meters.

14GR1621. This site is in tract D-4 and consists of a house foundation, a separate cellar and a well. The entire complex covers 600 sq. meters.

14GR1622. This site is in tract D-1-1 and consists of a house foundation and a piled limestone fence. The foundation covers 75 sq. meters and is north of a small tributary.

14GR1623. This site is in tract D-1-1 and is east of site 14GR1622. It consists of a house foundation and a well covering an area of 60 sq. meters.

14GR1624. This site is in tract D-2 and is north of a tributary and west of Fall River. The site contains a well, five foundations and a kiln. There is also a spring on the site. The site covers 100 sq. meters.

14GR1625. This site is in tract C-49-1 and is north of the road and east of the tributary. The site consisted of a single limestone foundation accompanied by a moderate scatter of historic material. It covers 30 sq. meters.

14GR1626. This site is in tract C-49-1 and is south of the road and east of the tributary. The site consists of a historic scatter covering 320 sq. meters. There was some flint in the scatter which may indicate a prehistoric occupation.

14GR1627. This site is in tract C-24 and consists of a light historic scatter. The site is east of a tributary and covers an area of 20 sq. meters.

14GR1628. This site is in tract D-1-3 on a rise east of a tributary. It consists of a piled limestone foundation and fence along with a tombstone that has "J.P. Stone, 21" carved in it. The land was deeded to a Joel Stone from Buffalo, N.Y. in 1886. The site covers 50 sq. meters.

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CULTURAL RESOURCES SURVEY OF FALL RIVER LAKE, KANSAS. (U)
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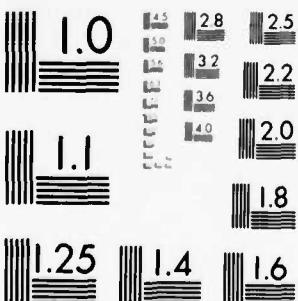
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14GR1629. This site is located in tract C-48 and is east of Fall River. The site consists of a cement foundation along with a well. The foundation and moderate scatter of historic material cover 1000 sq. meters.

14GR1630. This site is located in tract C-27 east of Fall River. The site consists of a cellar and a well. This site may be associated with 14GR1629 which is directly to the north. The well and cellar cover about 400 sq. meters.

14GR1631. This site is in tract C-26 and consists of a small wood frame building. The shed is on a road that leads to a creek. There were not any other buildings or foundations in the area. The site covers 10 sq. meters.

14GR1632. This site is in tract C-28 and is situated south of Fall River on the bluff slope. There is a gravel road running to it. The site had steel rails and a moderate historic scatter. It may have been a spot where ice was brought up from the river. The site covers about 120 sq. meters.

14GR2633. This is the site of the now removed Van Horn Cemetery. The site is located in tract C-28.

14GR1634. This site is located in tract C-29 and covers approximately 125 sq. meters. It contains a house foundation, a cellar and the local landmark of the "Twin Silos".

14GR1635. This site is located in tract C-46-1 just north of the road and east of Van Horn Creek. It contains the historic remains consisting of three limestone and cement foundations along with a well. The site covers an area of 2500 sq. meters.

14GR1636. This site is located in tract C-46-1 north of the road and west of Van Horn Creek. The historic site contains three foundations, a cellar and a well all of which covers approximately 3000 sq. meters.

14GR1637. This site is in tract C-45 and contains a cement foundation with steps north of the road, a low water bridge crossing the intermittent stream, and north of the road and west of the intermittent stream a square foundation and a well. The site covers about 200 sq. meters.

14GR1638. This site is in tract C-16, and is the former location of the Salt Creek School. The area is permanently inundated.

14GR1639. This site is located in three tracts: D-22, D-96 and D-98. It is the old railroad bed, sans tracks, of the Atchison, Topeka and Santa Fe Railroad.

14GR1640. This historic site is located in tract C-46-2 and is north of an intermittent stream. The site is a three walled U-shaped enclosure about 8 feet high made of piled stone. There is also a piled stone fence. The site covers an area of 10 sq. meters.

14GR1641. This site is located in tract C-56 and contains the historic remains of two structures. The structures were dug into the ground and had limestone walls. They may possibly be cellars. The site covers about 50 sq. meters.

14GR1642. This historic site is located in tract C-42 north of the road in the trees and brush. The site contains a pit silo and an old foundation, and covers about 20 sq. meters.

14GR1643. This historic site is in tract C-32 and is just west of the road. It contains a cement cellar and nothing else. The site covers an area of 10 sq. meters.

14GR1644. This site is in tract C-21 on the south side of an old field road. It is an old silo foundation that was about 6 feet in diameter.

14GR1645. This historic site is in tract C-21 in a wash and consists of a light historic scatter. There aren't any signs of a structure and it may have been a dump. The site and scatter covers 20 sq. meters.

14GR1646. This site is located in the northern section of C-21 and is north of the road. This site consists of a cement foundation, a cellar and a well. It covers about 100 sq. meters.

14GR1647. This site is in tract C-34 and consists of a foundation, a well and a cellar. The site is in dense woods and under brush north of the road. It covers 25 sq. meters.

14GR1648. This site is located in tract C-36 north of the road and west of an intermittent stream. It consists of four limestone foundations, a cellar and a well. The site covers an area of 50 sq. meters.

14GR1649. This site is located in tract C-39 on the southern edge of the planted field. It consists of a cement foundation that was probably for a barn. The site covers an area of 40 sq. meters.

14GR1650. This site is located in tract C-18 and is right on the edge of the lake. It consists of a cement foundation and trough along with a well. The site covers an area of 20 sq. meters.

14GR1651. This site is located in tract C-19 and is directly on the shoreline of the lake and is subject to wave action and periodic inundation. The site consists of a brick cellar and a foundation. It covers an area of 120 sq. meters.

14GR1652. This site is located in tract C-22 Rev. and is west of the lake. The remains consist of a cement slab foundation just off an old road. The site covers an area of 10 sq. meters.

14GR1653. This site is in tract C-22 Rev. and is south of 14GR1652. It contains the remains of an old bridge. All that is left are two cement footings that once supported the bridge. The site covers 10 sq. meters.

14GR1654. This site is in tract C-22 Rev. and is upstream of 14GR1653. This site is a small mound 5-7 feet high and about 10 feet in diameter. The mound is right down in the stream bed and is probably historic in origin.

14GR1655. This site is located in the southwest corner of tract C-22 Rev. It is a cement foundation with little or no scatter, and covers 10 sq. meters.

14GR1656. This historic site is located in tract C-14 on a bluff slope west of an old road. The site consists of a limestone foundation and a light historic scatter which covers 10 sq. meters.

14GR1657. This site is in tract C-14 on the bluff top west of 14GR1656. This site consists of a rectangular depression and a mound of dirt. There was no prehistoric scatter suggesting it is probably historic. The site covers 10 sq. meters.

14GR1658. This historic site is in tract B-8 and it is east of the road and west of the lake. The site consists of a house foundation and a light scatter which covers about 100 sq. meters.

14GR1659. This site is in tract B-4-1 and is north of the road and Badger Creek. The site is visible from the road and consists of a cement foundation, a well and a cellar. It covers 250 sq. meters.

14GR1660. This site is located in tract B-4-1 and is east of the road and west of Badger Creek. The site consists of a barn foundation and a mound of dirt, steel and other debris. It covers 100 sq. meters.

14GR1661. This site is in tract B-1 and is located north of a dry creek bed. The site consists of a limestone house foundation. The area covered by the site is 100 sq. meters.

14GR1662. This site is located in tract B-8 and consists of a series of foundations (4) north and south of the road, along with a standing tile silo. It covers 1500 sq. meters.

14GR1663. This site is in tract C-1 and south of Fall River Lake. The site is a three walled enclosure built into the hill with the hill forming the fourth wall. The walls are cement. The site covers 10 sq. meters.

14GR1664. This site is located in tract C-1 and it is directly east of 14GR1663 and it is basically the same thing. The site contains the remains of a foundation with three cement walls built into the hill and using the hill as the fourth wall. The site covers an area of 10 sq. meters.

14GR1665. This site is located in tract C-6 south of the lake. The site is an old silo foundation and covers an area of 5 sq. meters.

14GR1666. This site is located in tract C-9-1 and is north of Casner Creek. The site contains six foundations (limestone and cement), a well and on top of the ridge there is a piled limestone fence. It covers 1000 sq. meters.

14GR1667. This site is located in tract D-17 and it is north of Otter Creek. The site consists of two walls of an old house. The house and historic scatter cover an area of 50 sq. meters.

14GR1668. This site is located in tract D-18 just south of the road and north of Otter Creek. The site is a cellar along with a well down by the creek. The site covers an area of 25 sq. meters.

14GR1669. This site is located in tract D-19 just west of the Kansas Fish and Game Office. It is a cellar built into the hill, and covers 20 sq. meters.

14GR1670. This site is located in tract D-19 and is northeast of the Kansas Fish and Game office. It consists of a well, and covers 10 sq. meters.

14GR1671. This site is in tract D-34. It is a well just west of the road, and covers 5 sq. meters.

14GR1672. This site is in tract D-39 north of the road and Otter Creek on a hill. It contains the remains of two cement foundations and a well. The site covers 100 sq. meters.

14GR1673. This site is tract D-14 and south of Otter Creek. The site consists of the foundation of the old Book farmhouse and it covers an area of 50 sq. meters.

14GR1674. This site is in tract D-38 and it is north of Otter Creek and the road. The site contains the remains of two cement

foundations and a well. The site covers an area of 150 sq. meters.

14GR1675. This site is located in tract D-12 north of Otter Creek and south of the road. The site consists of several cement foundations, a windmill, a brick cellar and a silo. This is an old Russell home. It covers 600 sq. meters.

14GR1676. This site is in tract D-9 and consists of the remains of Twin Fall Cemetery. There is a foundation and some iron fence left. The site covers 50 sq. meters.

14GR1677. This site is in tract D-8 and is south of Otter Creek. It consists of a house foundation, and covers 100 sq. meters.

PRE-1947 CONTEMPORARY STRUCTURES:

As indicated earlier, the structures associated with this period are bridging devices (Fig. 11 shows their location). There are six basic types: steel truss bridges, arched concrete bridges, concrete bridges, concrete culverts, steel tubular culverts, low water bridges, and rip rap fords.

The steel tubular culverts, low water bridges and rip rap fords are most likely products of the reservoir's construction. The steel tubular culverts were placed in small narrow gullies and were then covered with gravel forming part of the road bed. Low water bridges were constructed of four steel tubular culverts upon which concrete was poured (Fig. 12a). They were built on larger gullies which are periodically inundated by the lake's waters. Rip rap fords were crosses by gravel roads of some larger creeks whose beds are normally dry, and which flood only during heavy rains or high lake levels (Fig. 12b). The rip rap prevents deeper erosion.



Figure 12. Low water bridging and rip-rapping.

Architecturally the most interesting bridging structures proper are the steel truss bridges. They date from the turn of the century to 1916. The data on them is recorded in the "Bridge Record," a ledger book filed in the Greenwood County Engineers Office in Eureka. Five of these bridges still exist while data on a sixth, the Old Climax Bridge, is available.

The Ladd Bridge. This steel girder bridge was constructed in 1900. at which time 1500 people celebrated its opening (Eureka Herald 1968: 35). The Midland Bridging Company built the five panel steel superstructure for \$1769.25 and W.G. Crebo built the stone substructure for \$1054.00. The bridge is 120 feet long with a 14 foot roadway and 17 feet high with a floor system of 2½ inch white oak. In 1915 a steel low truss approach was added by J.S. Davis. The truss is 80 feet long with a 14 foot roadway, is 8-6 feet in height, and consisted of five panels. The total cost of this addition was \$2154.45 (Fig. 13a).

The Otter Creek Bridge. The Jack White ford or the Otter Creek Bridge was built in 1901 by the Hoover Bridging Company for \$1500 which was paid by Greenwood County. The superstructure is a steel high truss that is 90 feet long and 17 feet high. The roadway is 14 feet wide and is oak plank with six panels. There are two 36 foot approaches to the bridge bringing the total length of the structure to 162 feet. The substructure is tubular piers filled with cement laid on rock with two sets of sway rods. The bridge was repaired in 1911 by Davis and Huntington for \$843.85 (Fig. 13b).

The Brown Bridge. The Sam Brown Bridge or the Burke Bridge was built in 1911 by Davis and Huntington at a cost of \$4743 of which the town of Fall River paid \$2375.50. The superstructure is steel, the substructure is concrete piers and the floor is wood. That bridge is 210 feet long with a 14 foot roadway and seven panels. The record states that the bridge is 2 feet high. This is obviously incorrect and should probably read 20 feet (Fig. 14a).

The Homer/Honey Creek Bridge. The Furgusson Bridge or the Homer/Honey Creek bridge existed before 1901 but there are no records as to when it was actually constructed. The substructure is stone and the superstructure is steel. The bridge is 80 feet long, 16 feet high, has a 14 foot roadway and contains five panels. The roadway has three double and two single lines of oak joists and 2 inch oak planks. This structure was inspected by C.C. Huntington on Aug. 20, 1903 and again by Huntington on Dec. 14, 1903. The condition of the bridge was fair on both occasions. In 1904 repairs were made by L. Daugherty totaling \$40 and also by Canton Bridge Company totaling \$350. (Fig. 14b).

The Fall River Bridge. This bridge is directly below the dam in a public use area. It has a substructure of stone and a superstructure of steel with a $2\frac{1}{2}$ foot floor. The length is 116 feet with a 16 foot roadway. The facts concerning who built the bridge are unclear. One high truss was either built by or purchased from the Kug Iron Bridging Company, Cleveland, Ohio while the other is from Farnsworth and Blodgett of Kansas City (Fig. 15a).

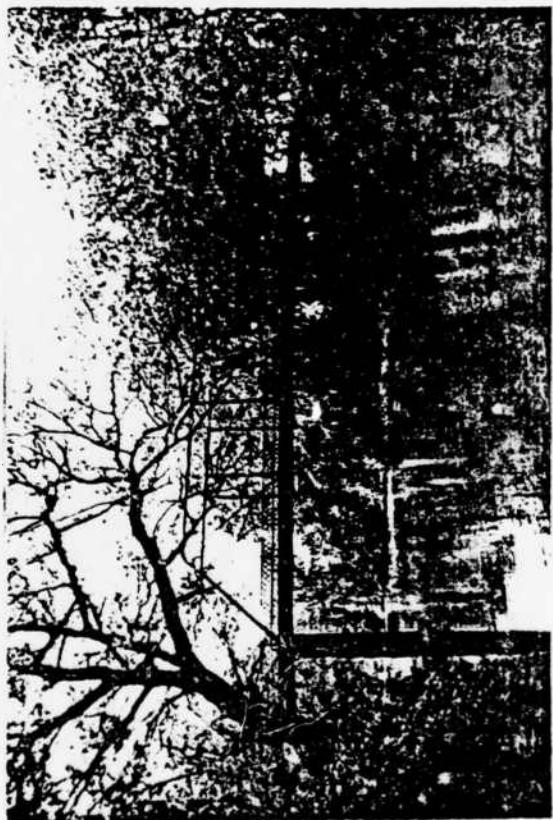
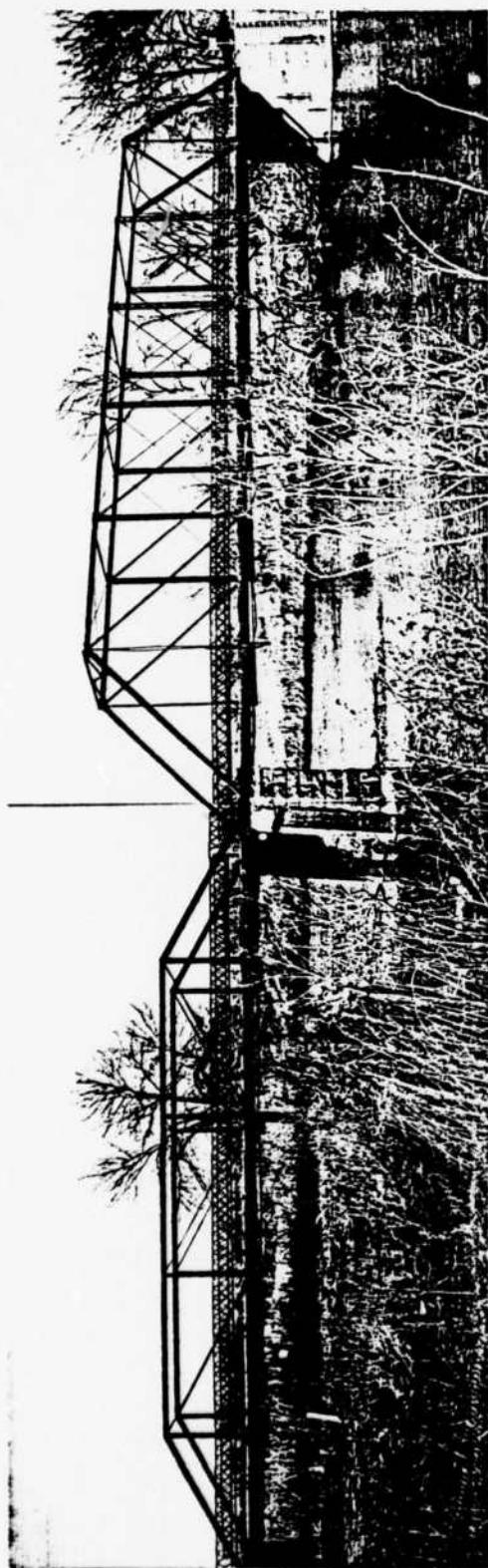


Figure 13. The Ladd and Otter Creek Bridges.

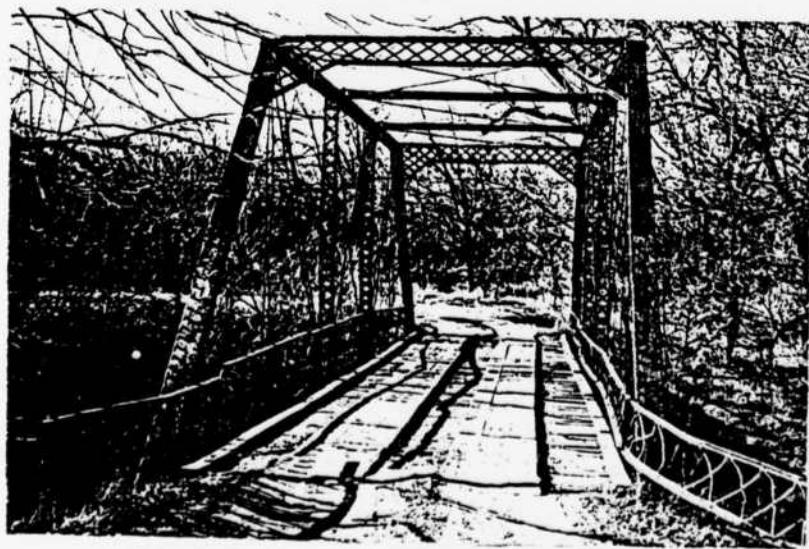
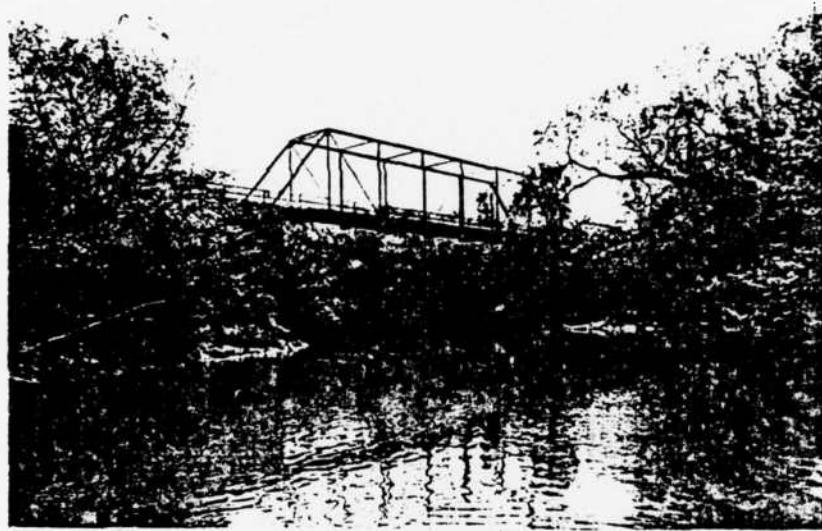


Figure 14. The Brown and Homer/Honey Creek Bridges.

The Climax Bridge. This site has had at least two bridges constructed on it. The bridge that now stands was built in 1928. It has a superstructure of concrete arches, and a substructure of concrete. However, we do not know who built it or how much it cost. The bridge that was there earlier was built by Walter Sharp in 1901. The previous bridge was built of stone with a gravel floor and had a span of approximately 100 feet. The roadway was 14 feet wide and the bridge was 23 feet high. In 1902 Walter Sharp did some repair work on the bridge for \$125 (Fig. 15b).

The remaining bridges are situated over Bulls Creek, Snake Creek and Durham Creek. They are built of concrete and the first two are arched.

The Bulls Creek Bridge. The Bulls Creek Bridge or tract D-84 East Bridge was built in 1912 by J.S. Davis, quote "to replace the old steel bridge which collapsed in May 1912 with Walt Prather's cattle." The bridge contains one 40 foot arch and is 12 feet high. The cost bid was \$1189 but the total cost came to \$1707.20 (Fig. 16a).

The Snake Creek Bridge. This bridge was built on the land of A. Holmes in 1915 by J.S. Davis. The bridge is a flat arch bridge 50 feet long with two 12 foot walls. The roadway is 15 feet 8 inches wide and the bridge is 9 feet high. The total cost of construction with steel was \$1595, Fall River Township paid \$797.50 (Fig. 16b).

The Durham Creek Bridge. No construction data was found in the "Bridge Record" on this bridge. Stylistically the superstructure railings match those of the concrete culverts found throughout the



Figure 15. The Fall River and Climax Bridges.

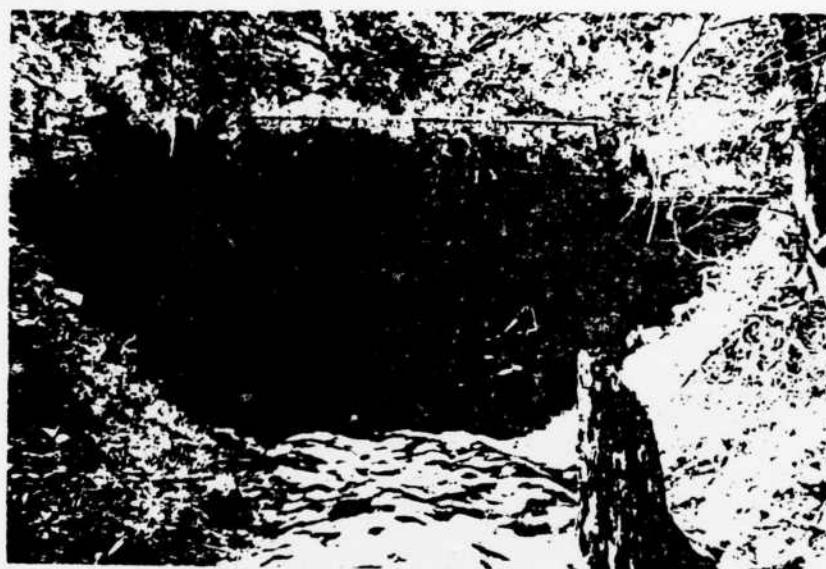


Figure 16. Bulls Creek and Snake Creek Bridges.

reservoir lands (Fig. 17a). They also match the 1928 Climax Bridge railings suggesting the style belongs to the 1920s, 30s and maybe the 1940s.

The Van Horn Bridge. No construction data was found in the "Bridge Record" on this bridge too. Stylistically the steel pipe railings may date it to the same construction period as the Snake Creek bridge with similar railings. If so, the bridge would date around 1915 (Fig. 17b).

Concrete Culverts. The final class of bridging structures in Fall River Lake are the concrete culverts (Fig. 18a-c). These were constructed over a variety of different sized gullies and unnamed intermittent streams. They have one, two and three panelled casted railings depending on their length. According to Mr. Sam Anderson, retired Greenwood County Engineer, the construction foreman would sometimes write their date of construction in the wet concrete but none were found on the few that were checked. Stylistically they probably date to the 1920s through the 1940s.

Finally, one last mode of crossing Fall River should be mentioned, that is natural fords (see Fig. 11). The fords are associated with the earliest settlements in the 19th century, and continue to be used today by the "foolhardy", "adventurous" or "young at heart" who had best be equipped with four-wheel drive.

Finally, one last mode of crossing Fall River should be mentioned, that is natural fords (see Fig. 11). The fords are associated with the earliest settlements in the 19th century, and continue to be used today



Figure 17. Durham Creek and Van Horn Creek Bridges.

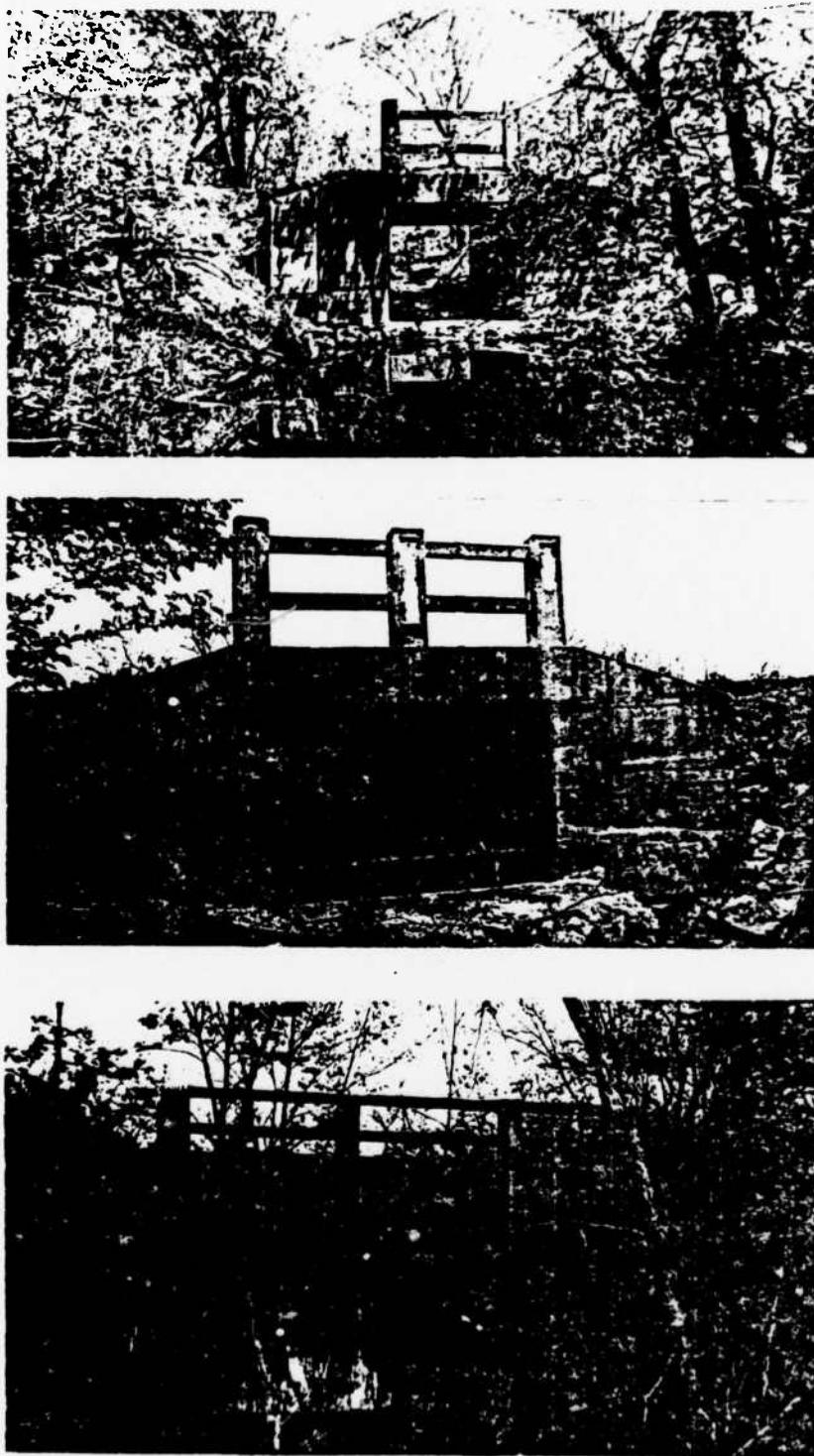


Figure 18. Concrete culverts: one, two and three
railed panel types.

by the "foolhardy", "adventurous" or "young at heart" who had best be equipped with four-wheel drive.

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VII

SETTLEMENT PATTERNS

As noted in section 3 of this report, one of the goals of this survey was to utilize the data collected herein to attempt a general comparison of the settlement patterns of the Fall River Lake area with Smithville Lake in northwestern Missouri within the broad general framework of cultural ecology. Specifically in this study we will attempt to delineate some aspects of the relationship of the exploitive or productive technology to the environment (Steward's procedure number one).

Technologically the Paleo-Indians were hunters of the late Pleistocene megafauna who also utilized the plants and small game in their environment. Their most significant weapon was the atlatl.

The Archaic Indians also utilized a weaponry similar to the Paleo-Indians but in addition appeared to have acquired the bow and during the latter half or third of their occupation. They extensively hunted smaller game (especially deer and bison), and made intense use of the plants in their environment as reflected by a proliferation of grinding tools.

It should be noted at this point that except for stylistic differences in tool types, the exploitive technology of the inhabitants of either Smithville Lake or Fall River Lake is the same. It is assumed the better documented base camp temporary camp pattern of the Smithville area is present in Fall River, but we have no excavated data to back up that assumption.

In the Early Ceramic period in Fall River we have two phases: Cuesta and Butler (Greenwood). In Smithville Lake we have Kansas City Hopewell and Late Woodland. For all four phases there are no technical differences in the hunting technology based on the tool types, only stylistic differences. The atlatl and bow and arrow were used. The utilization of flora does change in this period for it is at this time among Kansas City Hopewellians that domestic plants make their appearance in the diet. The best documented cultigens are squash (Cucurbita pepo), marsh elder (Iva annua var. macrocarpa), and corn (Zea mays) as reported in Johnson (1975), Johnson (1979), Ford (1979), and O'Brien (n.d.). Ford (1979: 237) suggests the Hopewellians had gardens whose focus was to provide seasonal security rather than high productivity of these products. They would then not be staples within the diet.

While Cuesta is a Hopewellian derived complex data on subsistence is so incomplete we cannot evaluate the presence let alone the role of domesticates within it. Conversely, Late Woodland subsistence in the Smithville area is so poorly known we can make no statement about it. We do have some data on the subsistence practices of the Butler (Greenwood) population. Calabrese (1967: 77-78) reports bones of turtle, rabbit, bird, beaver, deer and bison as well as utilization of two mollusca: Crenodonta peruviana and Lampsilis siligoidea at the Curry site. Fulmer (1976: 88-89) for site 14BU19 reports deer and rabbit as the most important animals. Of special importance is his data on the flora used: Acacia Cenchrus, Chenopodium, Panicum,

Polygonum, Setaria, Sorghum and Vicia. Tentatively he suggests a possible late summer/early fall occupation.

The resources used as well as the seasonal character of the sites points to a strategy of wild resource procurement for this complex. Thus, we would expect some similar use of environments previously exploited by Archaic peoples with larger base camps or permanent villages on soils with some agricultural potential.

In the Middle Ceramic the Steed-Kisker peoples of Smithville were full-fledged farmers and the scant data suggests farming was important to the Pomona population of Fall River (see O'Brien 1978; Witty 1967: 2-3). Both peoples used bison scapula hoes. Both populations hunted deer and bison as well as local mollusca and the tool technology suggests the bow and arrow was the weapon employed.

In the Late Ceramic The Lower Walnut peoples were farmers and they also utilized wild animals: especially deer and bison as well as some wild plants (Wedel 1959: 631). There are no peoples living in the Smithville area at this time which is just before the Kansa moved into the Kansas City-St. Joseph region after A.D. 1500.

Fall River Lake encompasses two major drainages: Fall River and Otter Creek as does the Smithville Lake, and both lakes encompass at least a portion of the grassy prairie uplands. Additionally, comparable archaeological survey data are available for the reservoirs, and they are roughly the same share: Fall River covers 14,998 acres while Smithville Lake is about 20,100 making it a quarter larger.

Smithville Lake encompasses two primary drainages: the Little Platte River and Camp Branch. These drainages are similar in size

to Fall River and Otter Creek, respectively. Smithville Lake is situated in the Dissected Till Plains of the Central Lowland province of North America, and represents an area of transition from hardwood (oak-hickory) forests along the streams to tall grass covered uplands (O'Brien 1977: 2). The lake area is located on a tributary of a tributary (the Platte River) of the Missouri River approximately 25 miles from the bluffs which line the floodplain of the Missouri.

Fall River Lake is situated in the Osage Plains of the Central Lowland province of North America but in a region never glaciated called the Osage Cuestas (Schoewe 1949: 280-285). The native vegetation of the area is Bluestem Prairie (Kuchler 1974: 595-597) which covers the whole uplands of eastern Kansas. Unlike Smithville Lake, the only hardwood forest in the region is in the Cross Timbers (an oak forest) focused in the Chautauqua Hills to the east (Schoewe 1949: 281). The southern end of the reservoir on the west side of the river has that ecotone setting (see Kuchler's 1974 map). Within the floodplain of the river proper, a forest of cottonwood-willow-elm is present (Kuchler 1974: 599-601).

As mentioned in the environment section, the Fall River Lake area has four soil types: Chase, Ivan, Osage and Reading series. Chase and Reading had a natural vegetation of tall prairie grasses with few deciduous trees. Ivan had walnut, sycamore, and burr oak with an understory of tall grasses, while Osage had deciduous hardwoods with an understory of tall grasses. While the exact relationships of sites and soils are not known, because there is no completed mapping of the soils available, the native vegetation they supported basically

conforms to Kuchler's descriptions of the Bluestem Prairie and the Cross Timber ecozones. The basic difference between Fall River and Smithville appears to be the presence of a rich oak-hickory forest in the latter and its lack in the former. Fall River is also located on a direct tributary, the Verdigris River, of the Arkansas River, but approximately 205 miles from its mouth at the Arkansas.

Thus, while the Missouri and Arkansas rivers are major drainages within the Great Plains, the one study area (Smithville Lake) is only 25 miles from such a drainage and the other (Fall River) is 205 miles from one.

For all the above similarities and differences, it was thought that a comparison of the cultural utilization of the two lake areas might prove revealing.

The cultural units manifested in the Smithville Lake area are somewhat different (taxonomically) than those manifested in Fall River Lake. In spite of this, the comparison will be made of the most culturally specific units for each major time period.

The cultural sequence for the Kansas City Area is as taken from Johnson (1974: 114-115):

- "1. Early Archaic - 8000-5000 B.C., Hardin Barbed and Agate Basin-like dart points.
2. Middle Archaic - 5000-2500 B.C., Nebo Hill and side-notched dart points.
3. Late Archaic - 2500 B.C. - A.D. 1, contracting-stemmed dart points.
4. Kansas City Hopewell - A.D. 1-500, corner-notched dart points and sand tempered, plain-surfaced pottery.
5. Late Woodland - A.D. 500-1000, corner-notched arrow points and cord-marked grit tempered pottery.

6. Steed-Kisker - A.D. 1000-1300, side-notched arrow points and shell-tempered plain-surfaced pottery.
7. Historic Indian: Kansa - A.D. 1500-1800, simple triangular arrow points, "Oneota-like" ceramics: Fanning Plain and Trailed, French, English, and American trade goods.
8. Euro-American - A.D. 1714-present, Utilitarian use of metal, especially iron, glazed ceramics, glass, religious paraphernalia of Christianity, etc."

The cultural chronology of the Kansas Antiquity Commission (KAC) is employed for Fall River. It is as follows:

1. Paleo-Indian 10,000 - 6,000 B.C.
2. Archaic 6,000 B.C. - A.D. 1
3. Early Ceramic A.D. 1 - 900
4. Middle Ceramic A.D. 900 - 1500
5. Late Ceramic A.D. 1500 - 1825
6. Historic Indian A.D. 1825 - 1847
7. Euro-American A.D. 1847 - present

A comparison of the two sequences reveals some inconsistencies.

Part of the nonfluted point tradition of "Paleo-Indian" is called Early Archaic in the Kansas City area. The Late Ceramic or "Proto-historic" period in Fall River is roughly equal to the Historic Indian of the Kansas City area. The KAC Historic period of A.D. 1825-1847 reflects the period when the eastern tribes (Shawnee, Pottowatomie, etc.) were moved to Kansas and would overlap the Kansas City area Euro-American Period.

For purposes of comparison between the two areas, the following specific cultural alignments will be employed.

Kansas City Area

Paleo-Indian
(Llano, Lindenmaier, Plano)

Fall River

Paleo-Indian
(same as K.C. area)

Kansas City Area

Early Archaic
(Hardin Barbed; Agate Basin)

Middle Archaic
(Nebo Hill; side-notched dart)

Late Archaic
(Contracting stemmed darts)

Kansas City Hopewell

Late Woodland

Steed-Kisker

Historic Indian
(Kansa)

Fall River

Early Archaic; Munkers
creek, (Chelsea phase)

Middle Archaic
(El Dorado phase;
Nebo Hill)

Late Archaic
(Walnut phase)

Cuesta (Cooper f.) phase

Butler (Greenwood) phase

Pomona phase

Lower Walnut focus
(proto-Wichita)

The reader will note that specific dates are not given to either sequence. This is done because the growing body of data suggests the Archaic will be re-defined in the Kansas City region (see Reid's (1978) work) as well as in the Fall River-El Dorado region around the Flint Hills. Additionally, the Butler and Cuesta phase dating is weak.

Fall River Lake is composed of two primary and several secondary drainages. The primary drainages are Fall River proper and Otter Creek. The secondary drainages worthy of note are Badger and Casner Creeks by the dam, Durham and Van Horn Creek further north and finally Honey Creek.

This section will deal with Fall River and Otter Creek only. The analysis of the settlement patterns was greatly limited due to the absence of some necessary information concerning the 19th century vegetation and the soil survey, and the lack of excavation data to give site function. Data which is present for Smithville Lake.

A composite map (in the Secretary of State's files in Topeka) made in the early to mid 1800s exhibits a floral dichotomy of trees and non-trees for the area. The trees are drawn in but they are not described in any detail. It is assumed that where trees were absent, prairie was present because that is the natural vegetation today.

No soil survey work was available for Greenwood County, since only a preliminary study was done in the past with inadequate or incorrect soil identification (Jim Fortner, S.C.S. Office, personal communication). Mr. Jim Fortner, who is presently analysing the soils for the Soil Conservation Service, reports that there are four basic soil types in the area. All of the soils are silt types. The two soils found in abundance are Reading Silt Loam and Ivan Silt Loam. The other two soils found in the reservoir area are, Chase Silty Clay Loam and Osage Silty Clay. Unfortunately a final mapping of them is not available for the lake area and makes it impossible to associate sites with soil types. This same problem was present for all the sites in Clinton county in Smithville Lake.

Eighty-six sites were located or identified during this survey, and 84 of them are on the valley floor. Two other sites, 14GR653 and 14GR654, were situated on a bluff slope and on a bluff top respectively, both are of unknown cultural affiliation. The data on the Smithville sites is taken from O'Brien (1977: 16-29), see Table 7. Table 8 presents equivalent data for Fall River. Those sites whose cultural identification is questionable (?) in Table) will be tabulated as Non-Ceramic.

TABLE 7
SMITHVILLE LAKE SITE DATA

Site Number	Site Type	19th C. Ecology Niche	Soil Name	Area	Elevation	Drainage	Nearest Water	Side of Stream	Stream Rank	Non-Ceramic	Paleo-Indian	Early Archaic	Middle Archaic	Late Archaic	K.C. Hopewell	Late Woodland	Steed-Kisker	Euro-American
23CL104	H	T	Mo.	F	7200	900'	Camp Br.	2000'	BT	N	4							
23CL105	H	T	Sh.	P	-	980'	Camp Br.	2000'	BT	S	4							
23CL106	H	T	Br.	P	4800	830'	L. Platte	700'	VF	W	5							
23CL107	H	T	Br.	P	18000	830'	L. Platte	400'	VF	W	5							
23CL108	M	T	La.	F/P	126	950'	L. Platte	1500'	BT	W	5							
23CL109	H	T	La.	F/P	27000	830'	L. Platte	600'	VF	W	5							
23CL110	H	T	Co.	F/P	-	820'	L. Platte	400'	VF	W	5							
23CL111	H	T/P	Ar.	F/P	5000	940'	L. Platte	2200'	BT	W	5							
23CL112	H	T	La.	F/P	2500	940'	L. Platte	500'	BT	W	5							
23CL113	H	T	Ke.	P	45000	820'	L. Platte	500'	VF	W	5							
23CL114	H	T	Mo.	F	7500	830'	L. Platte	600'	VF	W	5							
23CL115	H	T	Br.	P	11250	860'	L. Platte	1500'	VF	W	5							
23CL116	H	T	Ke.	P	15000	860'	Crows Ck.	300'	VF	W	5							
23CL117	H	T	Mo.	F	7500	920'	Crows Ck.	2000'	BT	W	5							
23CL118	H	T	Br.	P	-	820'	L. Platte	300'	VF	W	5							
23CL119	H	T	Ke.	P	-	820'	L. Platte	300'	VF	W	5							
23CL120	H	T	Ar.	F/P	-	850'	L. Platte	1200'	VF	W	5							
23CL195	H	T	Gr.	P	3375	835'	Camp Br.	150'	VF	N	4							
23CL196	H	T	Sh.	P	7500	895'	Crows Cr.	1500'	BT	S	3							
23CL197	H	T	La.	F/P	3600	875'	Camp Br.	600'	VF	S	4							
23CL198	H	T	Sh.	P	-	905'	Camp Br.	1500'	BT	S	4							
23CL199	H	T	Mo.	F	2400	835'	Camp Br.	300'	VF	N	4							
23CL200	H	T	Ar.	F/P	11250	885'	Camp Br.	1800'	BT	N	4							
23CL201	H	T	Ke.	P	2700	825'	Camp Br.	150'	VF	N	4							
23CL202	H	T	Ra.	F	10000	840'	Crows Cr.	600'	VF	E	3							
23CL203	H	T	Sh.	P	-	895'	Crows Cr.	1500'	BT	E	3							
23CL204	H	T	Sh.	P	40000	915'	Camp Br.	2500'	BT	N	4							
23CL205	H	T	Sh.	P	3750	915'	Camp Br.	2500'	BT	N	4							
23CL208	M	T	Ar.	F/P	95	825'	L. Platte	1500'	BS	N	5							
23CL209	PO?	T	Sh.	P	-	935'	Mitchell Br.	4500'	BS	N	2							
23CL210	C	T	Sh.	P	-	925'	Mitchell Br.	4500'	BS	N	2							
23CL211	F	T	Sh.	P	-	915'	Camp Br.	1000'	BS	N	4							
23CL213	F	T	Sh.	P	-	875'	Camp Br.	900'	VF	S	5							
23CL214	F	P	La.	F/P	-	890'	Camp Br.	1800'	VF	N	3							
23CL215	F	P	Sh.	P	-	870'	Camp Br.	1000'	VF	S	3							
23CL218	H	T	Ke.	P	1500	855'	Crows Ck.	300'	VF	N	3							
23CL219	H	T	La.	F/P	100	860'	Crows Ck.	1700'	BS	E	3							
23CL220	H	T	La.	F/P	250	835'	Crows Ck.	500'	BS	W	3							
23CL221	H	T	La.	F/P	250	845'	Crows Ck.	200'	BS	W	3							
23CL222	H	T	-	-	30	855'	L. Platte	1100'	VF	E	5							
23CL223	H	T	-	-	7500	815'	L. Platte	400'	VF	S	5							
23CL224	H	T	Br.	P	400	825'	L. Platte	1000'	VF	E	5							
23CL225	H	T	Br.	P	-	830'	L. Platte	800'	VF	W	5							
23CL226	F	T	Ke.	P	900	845'	L. Platte	800'	BS	E	5							
23CL227	F	T	La.	F/P	900	945'	L. Platte	2400'	BT	W	5							
23CL228	F	T	Br.	P	600	835'	L. Platte	600'	VF	W	5							
23CL229	H	P	Ke.	P	7500	870'	Holtzclaw Ck.	300'	VF	E	2							
23CL230	F	P	Ke.	P	900	890'	Holtzclaw Ck.	300'	VF	E	2							
23CL231	H	T	Br.	P	2400	890'	Camp Br.	800'	VF	E	3							
23CL232	H	T	Mo.	F	1200	870'	Camp Br.	200'	VF	E	3							
23CL233	H	P	Ke.	P	400	905'	Camp Br.	1000'	VF	E	3							
23CL234	F	P	La.	P	10	870'	Camp Br.	1200'	VF	W	5							
23CL235	H	T	La.	F/P	20	885'	L. Platte	600'	BS	W	5							

TABLE 7 (CONTINUED)

SMITHVILLE LAKE SITE DATA

Number	Site Type	19th C. Ecology Niche	Soil Name	Soil Type	Area	Elevation	Drainage	Nearest Water	Topography	Side of Stream	Stream Rank	Non-Ceramic	Paleo-Indian	Early Archaic	Middle Archaic	Late Archaic	K.C. Hopewell	Late Woodland	Steed-Kisker	Euro-American
21112	H	T	-	-	-	860'	L. Platte	600'	VF	W	4			X						
23C113	H	T	-	-	4000	940'	L. Platte	1500'	BT	W	4		X					X	X	
23C114	H	T	-	-	-	840'	L. Platte	300'	VF	W	5						X	X		
23C115	H	T	-	-	-	860'	L. Platte	400'	VF	E	4						X	X		
23C116	H	T	-	-	1800	840'	L. Platte	600'	VF	W	4						X	X		
23C117	H	T	-	-	2100	840'	L. Platte	1000'	VF	W	5						X	X		
23C118	H	T	-	-	2100	900'	Roberts Br.	200'	BT	W	2					X				
23C119	H	T	-	-	-	840'	L. Platte	400'	VF	E	4		X							
23C120	H	P	-	-	1500'	850'	L. Platte	300'	VF	W	4									
23C121	H	T	-	-	-	940'	L. Platte	1600'	BT	S	4		X				X	X		
23C122	H	T	-	-	100	935'	L. Platte	5000'	BT	E	5		X			X	X	X		
23C123	F	T	-	-	200	925'	L. Platte	5300'	BT	S	5									
23C124	F	T	-	-	100	955'	L. Platte	5000'	BT	S	4							X		
23C125	H	T	-	-	800	875'	L. Platte	400'	VF	E	4			X						
23C126	F	T	-	-	10	870'	L. Platte	400'	VF	E	4									
23C127	H	T	-	-	150	865'	L. Platte	300'	VF	E	4									
23C128	H	T	-	-	900	865'	L. Platte	600'	VF	E	4									
23C129	H	T	-	-	200	890'	L. Platte	400'	VF	S	4		X							
23C130	H	T	-	-	900	870'	L. Platte	600'	VF	E	4									
23C131	H	T	-	-	600	865'	L. Platte	500'	VF	W	4		X							
23C132	H	T	-	-	20	910'	L. Platte	400'	VF	E	4		X							
23C133	H	T	-	-	40	880'	L. Platte	400'	VF	W	4		X							
23C134	H	T	-	-	375	855'	L. Platte	700'	VF	E	4							X		
23C135	H	T	-	-	200	865'	L. Platte	1000'	VF	E	4						X	X		
23C136	H	T	-	-	45	865'	L. Platte	700'	VF	E	4									
23C136	H	T	-	-	2250	870'	L. Platte	900'	VF	E	4			X						
23C138	F	T	-	-	300	875'	L. Platte	950'	VF	E	4							X		
23C139	H	T	-	-	300	855'	L. Platte	400'	VF	E	4							X		
23C140	F	T	-	-	400	920'	Roberts Br.	1000'	BT	W	7							X		
23C141	H	T	-	-	10	845'	L. Platte	400'	VF	E	4						X	X		
23C142	H	T	-	-	20	845'	L. Platte	300'	VF	W	4			X			X	X		
23C143	F	T	-	-	20	900'	L. Platte	1000'	VF	E	4							X		
23C144	K?	T	-	-	6	885'	L. Platte	2200'	BS	W	4							X		
23C145	H	T	-	-	-	845'	L. Platte	600'	VF	W	4		X				X	X		
23C146	H	T	-	-	10	890'	L. Platte	400'	VF	E	4									
23C147	H	T	-	-	150	875'	L. Platte	300'	VF	W	4							X		
23C148	H	T	-	-	400	875'	L. Platte	300'	VF	W	4									
23C149	H	T	-	-	50	875'	L. Platte	1200'	VF	W	4		X							
23C150	F	T	-	-	10000	865'	L. Platte	1000'	VF	W	4									
23C151	H	T	-	-	-	855'	L. Platte	800'	VF	W	5		X							
23C152	H	T	-	-	-	835'	L. Platte	500'	VF	W	5		X							
23C153	H	T	-	-	-	845'	L. Platte	800'	VF	W	5									
23C154	H	T	-	-	600	880'	L. Platte	600'	VF	E	4		X							
23C155	M	P	-	-	-	905'	L. Platte	800'	BS	W	4							?		

♦ square meters
 H = habitation
 M = mound
 PO = post office
 C = cemetery
 F = farmstead
 K = kiln

BT = bluff top
 VF = valley floor
 BS = bluff slope
 N = north
 S = south
 E = east
 W = west

TABLE 3
FALL RIVER LAKE PREHISTORIC
ARCHAEOLOGICAL SITE

Site Number	Site Type	Site C. Ecology	Area (sq. m.)	Elevation	Drainage	Nearest Water	Topography	Side of Stream	Stream Bank	Non-Ceramic	Pottery	Chert	El Burada	Mabut	Bulter (unstratified)	Custa (copper)	Pumice	Lower Holoc.	Euro-American
1468600	H	H	100	1000	Fall River	150	VP	H											
1468601	H	P	1000	1010	Fall River	200	VP	H											
1468602	H	W	1000	1000	Fall River	100	VP	H											
1468603	H	P	2000	980	Fall River	300	VP	H											
1468604	H	W	75	1000	Fall River	500	VP	H											
1468605	H	W	75	1000	Fall River	250	VP	H											
1468606	H	W	75	1000	Fall River	500	VP	H											
1468607	H	P	2500	1000	Fall River	250	VP	S											
1468608	H	W	1250	1000	Fall River	100	VP	S											
1468609	H	W	5000	1000	Fall River	100	VP	E											
1468610	H	W	75	995	Fall River	100	VP	H											
1468611	H	P	2000	990	Fall River	300	VP	H											
1468612	H	P	2500	985	Fall River	200	VP	S											
1468613	H	W	5000	980	Fall River	50	VP	S											
1468614	H	W	3600	980	Fall River	300	VP	S											
1468615	H	W	15	980	Fall River	30	VP	H											
1468616	H	P	1600	980	Fall River	1000	VP	H											
1468617	H	W	1175	980	Fall River	500	VP	H											
1468618	H	P	1800	985	Fall River	1000	VP	H											
1468619	H	P	400	995	Fall River	500	VP	H											
1468620	H	W	1500	975	Fall River	200	VP	H											
1468621	H	W/P	1500	975	Fall River	200	VP	S											
1468622	H	P	12,500	980	Fall River	800	VP	H											
1468623	H	P	3000	975	Fall River	900	VP	H											
1468624	H	P	3000	975	Fall River	300	VP	H											
1468625	H	W	200	975	Fall River	150	VP	E											
1468626	H	W	1000	975	Fall River	150	VP	E											
1468627	H	P	25	975	Fall River	200	VP	E											
1468628	H	P	1200	975	Fall River	500	VP	H											
1468629	H	P	3000	965	Fall River	700	VP	H											
1468630	H	W	20,000	960	Fall River	100	VP	H											
1468631	H	W/P	375	970	Fall River	100	VP	S											
1468632	H	W	900	960	Fall River	100	VP	S											
1468633	H	P	1000	965	Fall River	1200	VP	S											
1468634	H	P	600	965	Fall River	1200	VP	S											
1468635	H	W	225	965	Fall River	200	VP	H											
1468636	H	W	250	960	Fall River	300	VP	E											
1468637	H	W	100	960	Fall River	100	VP	H											
1468638	H	W	150	960	Fall River	300	VP	E											
1468639	H	P	600	960	Fall River	500	VP	H											
1468640	H	P	2100	955	Fall River	150	VP	H											
1468641	H	P	400	960	Fall River	100	VP	E											
1468642	H	W	800	960	Fall River	100	VP	E											
1468643	H	W	1000	960	Fall River	100	VP	S											
1468644	H	W	2500	960	Van Horn Cr.	200	VP	H											
1468645	H	W	200	960	Van Horn Cr.	300	VP	H											
1468646	H	P	500	965	Van Horn Cr.	500	VP	H											
1468647	H	W/P	1200	955	Van Horn Cr.	50	VP	H											
1468648	H	P	6000	955	Van Horn Cr.	50	VP	S											
1468649	H	W	300	960	Van Horn Cr.	50	VP	E											
1468650	H	W	525	960	Van Horn Cr.	50	VP	E											
1468651	H	W	800	960	Van Horn Cr.	50	VP	E											
1468652	H	W	1600	965	Van Horn Cr.	50	VP	E											
1468653	H	P	20	955	Fall River	300	SS	H											
1468654	H	P	9	970	Casper Cr.	200	ST	S											
1468655	H	W	3000	1015	Otter Cr.	100	VP	H											
1468656	H	P	75	1008	Otter Cr.	200	VP	H											
1468657	H	W	5000	1008	Otter Cr.	100	VP	S											
1468658	H	W	2400	1008	Otter Cr.	180	VP	S											
1468659	H	W/P	1000	990	Otter Cr.	100	VP	S											
1468660	H	W	1050	998	Otter Cr.	100	VP	S											
1468661	H	W	4400	1048	Otter Cr.	150	VP	S											
1468662	H	W	2500	1018	Snake Cr.	200	VP	S											
1468663	H	W	300	970	OTTER Cr.	200	VP	S											
1468664	H	W	18,000	995	Otter Cr.	500	VP	H	3										
1468665	H	W	5000	990	Otter Cr.	50	VP	H	3										
1468666	H	W	400	990	Otter Cr.	100	VP	H	3										
1468667	H	P	2100	985	Honey Cr.	200	VP	S	3										
1468668	H	P	1000	980	Honey Cr.	100	VP	E	3										
1468669	H	W	600	985	Otter Cr.	200	VP	S	3										
1468670	H	W	50	985	Otter Cr.	200	VP	H	3										
1468671	H	P	1200	980	Otter Cr.	100	VP	H	3										
1468672	H	W	800	980	Otter Cr.	150	VP	H	3										
1468673	H	P	1000	975	Otter Cr.	200	VP	H	3										
1468674	H	W	1000	965	Otter Cr.	50	VP	H	3										
1468675	H	W	3750	975	Otter Cr.	250	VP	H	3										
14687 (314)	H	W	15,000	985	Fall River	500	VP	E	3										
14687 (315)	H	W	2000	985	Durman Cr.	450	VP	E	2										
14688	H	W	-	985	Van Horn Cr.	250	VP	E	2										
14689313	H	W	600	920	Fall River	600	VP	E											
1468976	H	W	-	940	Fall River	350	VP	H											
1468977	H	W	-	960	Casper Cr.	100	VP	H	3										
1468978	H	P	-	965	Casper Cr.	100	VP	H	3										
1468979	H	W	-	930	Fall River	500	VP	E											
1468980	H	W	-	925	Fall River	700	VP	E											
1468981	H	W	-	925	Fall River	350	VP	E											

* in feet
H = habitation
W = wall
V = vessel
P = projectile
S = search
S = surface

E = east
W = west
VP = valley floor
SS = bluffy slope
SE = bluffy toe

Fall River has 69 sites which show some evidence of occupation from Paleo-Indian times up to historic contact. Otter Creek has 26 sites with evidence of occupation starting in Paleo-Indian times up to historic contact: see Table 9.

The Paleo-Indian period as expressed on Fall River consists of a Hell Gap point from site 14GR618. This site is located on the valley floor at a 985 foot elevation, and is 1000 feet away from the nearest water. On Otter Creek there is one Paleo-Indian site, 14GR671, and it is on the valley floor. This site had a Dalton drill on it, is at a 980 foot elevation, and is located 100 feet away from the nearest water. Both of these artifacts belong to the Plano complex and are of late Paleo-Indian. These sites like the Paleo-Indian ones in Smithville Lake are on the valley floor. In Smithville they are 400 feet from water while at Fall River they would average 550 feet. The Paleo-Indian occupation would seem very similar in the two regions.

The Early Archaic sites on Fall River range in elevation from 950 to 1000 feet (average 976.4 feet), and are situated from 100 to 1000 feet from water (average 435.7 feet). All sites are on the valley floor, and 57% are in prairie settings and 43% are wooded. The four Early Archaic sites on Otter Creek range in elevation from 965 to 1005 feet (average 988.7 feet), and are situated from 50 to 150 feet from water (average 100 feet). One site (25%) was in a wooded environment, while 75% (3) were in prairie settings. All sites are on the valley floor. In Smithville they range from 835 to 865 feet in elevation (average 849 feet). All sites are on the valley floor but one, which is on the bluff top. The sites are from

TABLE 9
ARCHAEOLOGICAL COMPONENTS ON FALL RIVER

	No.	%	No.	%
Paleo-Indian	1	1.4%	1	2.3%
Early Archaic	7	9.7%	7	15.9%
Middle Archaic	10	13.8%	10	22.7%
Late Archaic	6	8.3%	6	13.6%
Early Ceramic	16	22.2%	16	36.3%
Middle Ceramic	3	4.1%	3	6.8%
Late Ceramic	1	1.4%	1	2.3%
Non-Ceramic (unknown)	28	38.9%	—	—
Totals	72	99.8%	44	99.9%

ARCHAEOLOGICAL COMPONENTS ON OTTER CREEK

	No.	%	No.	%
Paleo-Indian	1	3.4%	1	4.7%
Early Archaic	4	13.8%	4	19.0%
Middle Archaic	4	13.8%	4	19.0%
Late Archaic	2	6.9%	2	9.5%
Early Ceramic	3	10.3%	3	14.3%
Middle Ceramic	6	20.7%	6	28.5%
Late Ceramic	1	3.4%	1	4.7%
Non-Ceramic (unknown)	8	27.5%	—	—
Totals	29	99.8%	21	99.7%

150 to 600 feet from water (average 407 feet). On the Little Platte all the sites are in wooded settings while on Camp Branch they were in prairie.

The Middle Archaic sites on Fall River range in elevation from 960 to 1000 feet (average 973.5 feet), and are situated from 100 to 1200 feet from water (average 625 feet). All sites are on the valley floor, and 40% are in wooded settings and 60% in prairie. The four Middle Archaic sites on Otter Creek range in elevation from 990 to 1005 feet (average 998.7 feet), and range from 100 to 200 feet from water (average 145 feet). The sites are on the valley floor in wooded settings, except one which is in a wooded/prairie setting. In Smithville the Camp Branch sites are in prairie settings while the Little Platte sites are 40% prairie, 40% wooded and 20% wooded/prairie. About 6% of the Middle Archaic sites are on the bluff top while 94% are on the valley floor. They are at the 820 to 910 foot elevation (average 809 feet), and are 150 to 1500 feet from water (average 589 feet) for the valley floor sites.

The Late Archaic sites on Fall River range in elevation from 960 to 1000 feet (average 980.8 feet), and are situated from 100 to 1000 feet from water (average 508.3 feet). All sites are on the valley floor, and 60% are in prairie settings and 40% wooded. On Otter Creek the two sites are a 100 to 150 feet from water (average 125 feet), and are at the 990 to 1005 foot elevation (average 997.5 feet). They are in wooded or wooded/prairie settings, and are on the valley floor. In Smithville the Camp Branch sites are 66% in prairie settings, 17% wooded, and 17% wooded/prairie. On the Little

Platte 33% are prairie, 33% are wooded, and 33% wooded/prairie.

The Late Archaic sites are 25% on the bluff top and 75% on the valley floor. The valley floor sites are 150 to 1200 feet from water (average 558 feet), and are at the 820 to 875 foot elevation (average 843 feet). The bluff sites are 1600 to 2500 feet from water (average 2025 feet), and at the 900 to 980 foot elevation (average 934 feet).

The data from the Archaic for the two regions suggest a rough basic similarity of occupation except that the Fall River Lake sites are generally closer to water, and there is no utilization of the bluff tops. In Smithville, sites on the valley floor are within a 40 foot elevation zone while in Fall River they are within a 6 feet zone. This may only reflect the greater depth of valleys in the glaciated Smithville area. The use of prairie and wooded settings by both indicates the predictable Archaic use of those environments for animals and plants.

Ceramic period sites are all situated on the valley floor in Fall River Lake. Further, all those sites on Otter Creek are in wooded settings. On Fall River all the Cuesta sites are in wooded settings as is the lone Lower Walnut site. The Butler phase sites are 31% in prairie settings and 69% wooded while the 57% of the Pomona sites are wooded, 29% are prairie and 14% are wooded/prairie.

In Smithville Lake 50% of the Kansas City Hopewell sites are on prairie on Camp Branch while 25% are wooded, and 25% wooded/prairie. Also 50% of the Late Woodland sites are prairie and 50% wooded/prairie while 80% of the Steed-Kisker sites are on prairie and 20% wooded. On the Little Platte 80% of Kansas City Hopewell are prairie and

20% are wooded/prairie. Late Woodland sites are 60% prairie, 10% wooded, and 30% wooded/prairie. Steed-Kisker sites are 50% prairie, 8% wooded, and 42% wooded/prairie.

Except for the fact that there are no Historic Indian sites in the Smithville area, the environmental setting used by the Ceramic making peoples of the two areas is quite similar.

The Ceramic period sites in Fall River Lake have the following locations vis-a-vis water resources. Cuesta phase sites range from 100 to 600 feet (average 400 feet) on Fall River. The two Cuesta sites on Otter Creek range from 100 to 180 feet from water (average 140 feet). These differences may reflect the potential for flooding on Fall River. Butler phase sites range from 100 to 1200 feet (average 373 feet) on Fall River. The lone Butler site on Otter Creek was 100 feet from water. Within the Early Ceramic period Cuesta sites are further from water on Fall River than Butler sites. Middle Ceramic Pomona sites range from 100 to 300 feet (average 161.4 feet) on Fall River. Pomona sites on Otter Creek though, range from 100 to 500 feet (average 188.3 feet). The Late Ceramic Great Bend sites (Lower Walnut focus) are both only 100 feet from water on both Fall River and Otter Creek. Thus, if Cuesta is the earliest Ceramic complex in the region, Ceramic sites are located, in general, closer and closer to water through time on Fall River. In a rough way, sites are located closer to Fall River as one comes down through time from Paleo-Indian to Great Bend. One can only speculate (lacking good excavation data) whether this shift is related to agriculture or environmental shifts or both.

Cuesta phase sites are at the 930 to 1005 foot elevation (average 963 feet) on Fall River, and 1005 foot elevation on Otter Creek. Butler phase sites on Fall River range from 930 to 1005 feet in elevation (average 971.5 feet) while on Otter Creek the lone site is at the 1005 foot of elevation. The Pomona sites range from 950 to 1005 feet of elevation (average 979.2 feet) on Fall River, and from 980 to 1015 feet on Otter Creek (average 998.3 feet). The Lower Walnut site on Fall River is at the 960 foot elevation and the one on Otter Creek is at 1005 feet.

Thus, on Fall River the sites on the average move higher up in elevation through time while on Otter Creek there is only a 10 foot difference. Again one can speculate on the role of agriculture, especially the use of the bottom lands as being important here.

In Smithville Lake, Kansas City Hopewell sites are on the valley floor between the 820 to 910 foot elevation (average 843 feet), and only one site was on the bluff top (940 foot elevation). They are from 150 to 1500 feet from water (average 488 feet) with the bluff site 1600 feet from water. Late Woodland sites are 79% on the valley floor, 16% on the bluff slope and 5% on the bluff top. The valley floor sites range from 815 to 875 feet in elevation (average 841 feet), the bluff slope sites from 845 to 885 feet (average 858 feet) and the bluff top 940 feet. The valley floor sites range 300 to 1500 feet from water (average 620 feet) while the bluff slope sites are 200 to 800 feet (average 588 feet), the bluff top site is 1600 feet from water. The Steed-Kisker sites, excluding the burial areas, are basically found on the valley floor (87%) while only a few (13%)

are found on the bluff slopes or tops. Those on the valley floor range from the 815 to 870 foot elevation (average 844 feet) and are 150 to 1500 feet from water (average 613 feet). Those on the bluffs are at the 835 to 940 foot elevation (average 880 feet) and are 400 to 1700 feet from water (average 1075 feet).

All the Ceramic sites in Smithville have approximately the same elevations be they on the valley floor or bluff: 843 feet/940 feet, 841 feet/899 feet, 844 feet/ 883 feet. They are also located from water on the average of 488/1600, 620/800, and 613/1075 feet (valley floor to bluff respectively). There is less uniformity relative to water availability through time.

In general, on the average Ceramic sites are located closer to water in Fall River Lake than Smithville Lake. Also vis-a-vis elevation levels sites in general increase in elevation in Fall River Lake while they have about the same elevation in Smithville Lake. However, in Smithville Lake the dichotomy of valley floor and bluff sites which appears most markedly in the Late Archaic, continues through the Ceramic period. This dichotomy is not apparent in Fall River Lake. In Smithville Lake, since we have excavation data we know this use is related to the location of specialized, limited activity sites most particularly in the Ceramic periods.

Discussion

Tables 10 and 11 show the number and percentages of the archaeologically identifiable components in Smithville and Fall River Lakes respectively. The following is a discussion of these data.

TABLE 10
IDENTIFIED ARCHAEOLOGICAL COMPONENTS IN SMITHVILLE LAKE

Camp Branch		Little Platte	
	No.	No.	%
Paleo-Indian	0	0	2.5%
			2.5%
		0.0%	
Early Archaic	1	7.7%	
Middle Archaic	1	7.7%	
Late Archaic	6	46.1%	
		61.5%	
Kansas City Hopewell	2	15.4%	
Late Woodland	0	0	
		15.4%	
Steed-Kissee	3	23.1%	
		23.1%	
TOTALS	13	100.0%	99.9%

TABLE 11
IDENTIFIED ARCHAEOLOGICAL COMPONENTS IN FALL RIVER LAKE

Otter Creek		Fall River	
No.	%	No.	%
Paleo-Indian			
1	4.7%	1	2.3%
Early Archaic	4.7%	4.7%	2.3%
Middle Archaic	19.0%	19.0%	15.9%
Late Archaic	19.0%	9.5%	22.7%
	9.5%	6	13.6%
Questa	47.5%	47.5%	52.2%
Butler	9.5%	9.5%	6.8%
	4.7%	4.7%	29.5%
Pomona	14.2%	14.2%	36.3%
Lower Walnut	28.6%	28.6%	6.8%
	4.7%	4.7%	2.3%
TOTALS	21	99.7%	99.9%

In the Paleo-Indian period both Fall River and the Little Platte had been settled in similar fashions. Fall River had one Paleo-Indian site representing 2.3% of the identified components while the Little Platte had two sites for 2.5% of known components. Otter Creek had one Paleo-Indian site that represents 4.7% of the known components but there were no identified Paleo-Indian sites on the Camp Branch. This suggests the smaller tributary valleys were not used the same way in the two regions.

The Archaic period occupations on Fall River account for 52.2% (23) of the total known components, while on Otter Creek the Archaic occupation accounts for 47.5% (10) of the identified components. The Little Platte's Archaic occupation accounts for 35.4% (28) of the known components while on the Camp Branch the Archaic accounts for 61.5% (8) of the known components. As these data show, these areas were settled quite differently. Fall River, Otter Creek and Camp Branch are all bordering on prairie environments, and in Smithville it was noted that Archaic people tend to populate and utilize prairie environments (O'Brien 1977:24). The Fall River data seems to support this statement. The Little Platte on the other hand was located in essentially a hardwood forest, and it has a comparatively small Archaic population.

Additionally, there are some interesting interval differences within the Archaic. In Fall River Lake, Otter Creek was used more heavily in the Early and Middle Archaic while Fall River proper reflects a roughly similar pattern of utilization with more people in the Early and Middle than Late. The Little Platte matches Fall River with the Middle Archaic being dominant but Camp Branch has a completely

different pattern. The Early and Middle Archaic are the same with a dramatic jump, to 46.1%, in the Late Archaic. Why these differences occur can only be answered by a detailed study of the subsistence practices. We have no such data from the Fall River area and the Kansas City data is incomplete.

In the Early Ceramic we get the following distribution of sites on the Fall River: Butler 29.5% (13) and Cuesta 6.8% (3). On Otter Creek the Butler phase is represented by 4.7% (2) of the sites and Cuesta by 9.5% (2). Statistically the occupation of the two drainages is dramatically different in Butler phase. At Smithville Lake Kansas City Hopewell accounts for 12.6% (10) of the sites on the Little Platte while Late Woodland has 19% (15). Thus, 31.6% (25) of the sites on the Little Platte are Early Ceramic. Kansas City Hopewell accounts for 15.4% (2) of the Early Ceramic sites on Camp Branch, and there is no Late Woodland occupation. Statistically this makes the occupation of the major/minor drainages of the two lakes quite different in the later part of the Early Ceramic. The Cuesta occupation on the two Fall River Lake drainages is fairly similar. Ironically, in spite of these differences the Early Ceramic gross percentages are quite similar: Camp Branch 15.4% and Otter Creek 14.2%, and the Little Platte 31.6% and Fall River 36.3%. Thus, the Early Ceramic distributions in the two regions are characterized by only minor differences between them.

The Middle Ceramic is manifested in the Fall River Reservoir by the Pomona phase, and by the Steed-Kisker complex in the Smithville area. The Pomona phase represents 6.8% (3) of the known components

on Fall River, and 28.6% (6) on Otter Creek. The Steed-Kisker population on the Little Platte River represents 30.4% (24) of the known components and 23.1% (3) of them on Camp Branch. This would suggest a dramatic reversal of use in the two with the main drainage more densely used in Smithville and the minor one more important in Fall River. Lacking good subsistence data we cannot say if this reflects the greater importance of agriculture between the two areas.

The Late Ceramic period in the Fall River Reservoir is expressed in the Lower Walnut focus of the Great Bend Aspect. This component is identified twice, once on Fall River representing 2.3% of the known components and once on Otter Creek representing 4.7% of the occupation. There is nothing comparable in the Smithville area at this time, and the area seems to be abandoned.

IX

CONCLUSIONS

Prehistoric people have populated the Fall River Lake area since Paleo-Indian times, over 12,000 years ago, to the proto-historic Wichita Indians. The majority, about 50.7% (33), of the known components in the area appear to have been Archaic, and 3% were Paleo-Indian. The Ceramic components account for about 46.1% (30) of the remaining known components. As can be seen 53.7% of the components existed before the birth of Christ at a time when most human populations in North America were hunters and gatherers.

Table 12 shows the number of known prehistoric components and their percentages for both Fall River Lake and Smithville Lake (sites of unknown affiliation are excluded). Those percentages show considerable fluctuations thru time and considerable difference between these two spaces over time. In general they suggest the Archaic was the period of most active population dynamics.

That this dynamics maybe more apparent than real is suggested by examining the adjusted figures for the habitation area (expressed in square meters) of occupation for each cultural entity. Smithville Lake shows a slow steady rate of growth beginning with a major increase (10.1% from a previous .9% in the Paleo-Indian period) in the Early Archaic and culminating in maximum presence (25.4%) in the Middle Ceramic with the Steed-Kisker population. Thus, the Smithville Lake area appears to show a steady growth until the Late Ceramic when humans abandon the area.

TABLE 12
Component Numbers and Their Site Areas

FALL RIVER LAKE						SMITHVILLE LAKE					
	No.	%	Area (m ²)	%	*Area (m ²)		No.	%	*Area (m ²)	%	
Paleo Indian	2	3.0	3,375	1.0	1.018	.9	2	2.6	1,882	.9	Paleo-Indian
Archaic:											
Early	11	16.9	46,725	13.7	15,279	14.9	5	6.6	19,983	10.1	Early Archaic
Middle	14	21.5	62,975	18.5	20,133	19.6	14	18.4	19,259	9.8	Middle Archaic
Late	8	12.3	35,000	10.3	13,079	12.7	11	14.4	26,733	13.6	Late Archaic
Early Ceramic:											
Cuesta	5	7.7	40,500	11.9	11,800	11.5	10	13.1	37,469	19.0	K.C. Hopewell
Butler	14	21.5	54,425	16.0	19,111	18.6	12	15.8	41,014	20.9	Late Woodland
Middle Ceramic	9	13.9	71,800	21.0	14,282	13.9	22	28.9	49,867	25.4	Steed-Kisker
Late Ceramic	2	3.0	26,000	7.5	7,666	7.4	0	-	-	-	
	65	99.8	340,800#	99.9	102,368	99.6	76+	99.8	196,207+	99.7	

not adjusted for multi-component sites.

* adjusted for multi-component sites.

+ figures do not include 13 sites with known components for whom no areal data are available (17% of Smithville Lake sample).

By contrast Fall River Lake while showing an initial increase in occupation in the Early Archaic rises and falls over the intervening centuries with potentially the maximum habitation in the Middle Archaic, and the next major increase in the Butler phase of the Early Ceramic. Table 13 graphically illustrates the differences between the two regions. If there is a relation between area of occupation and population, and we know there is although it is very complicated (see Cook and Heizer 1968), we could see that these changes thru time reflect population increases and/or decreases within the two regions.

Several interesting observations can be made from these data, and from a general comparision of the two environmental settings. First some facts, Smithville Lake as mentioned earlier encompasses 20.174 acres of land (including fee lands and easements); Fall River Lake encompasses 14,998 acres (including the acreage of the lake, and fee and easement lands). Thus, Smithville Lake is approximately 25 percent larger than Fall River Lake. At Smithville Lake over 16,100 acres were surveyed (ca. 79.8% of all the land). At Fall River Lake 12,147 were surveyed in this study, and this figure does not include the six sites visited by Spaulding in 1947 in areas now permanently under water. If we allow 53 acres to have been seen by him, this rounds the acreage figure to 12,200, we would find that approximately 81.3% of the Fall River Lake was surveyed. The unsurveyed lands in Smithville Lake were at the upper end of the reservoir while at Fall River Lake the lower end of the reservoir was unsurveyed. This data suggests that we can roughly consider the samples from each lake to be comparable excluding general lake size. Fall River Lake had 102,368 m² (sq. meters) of habitation

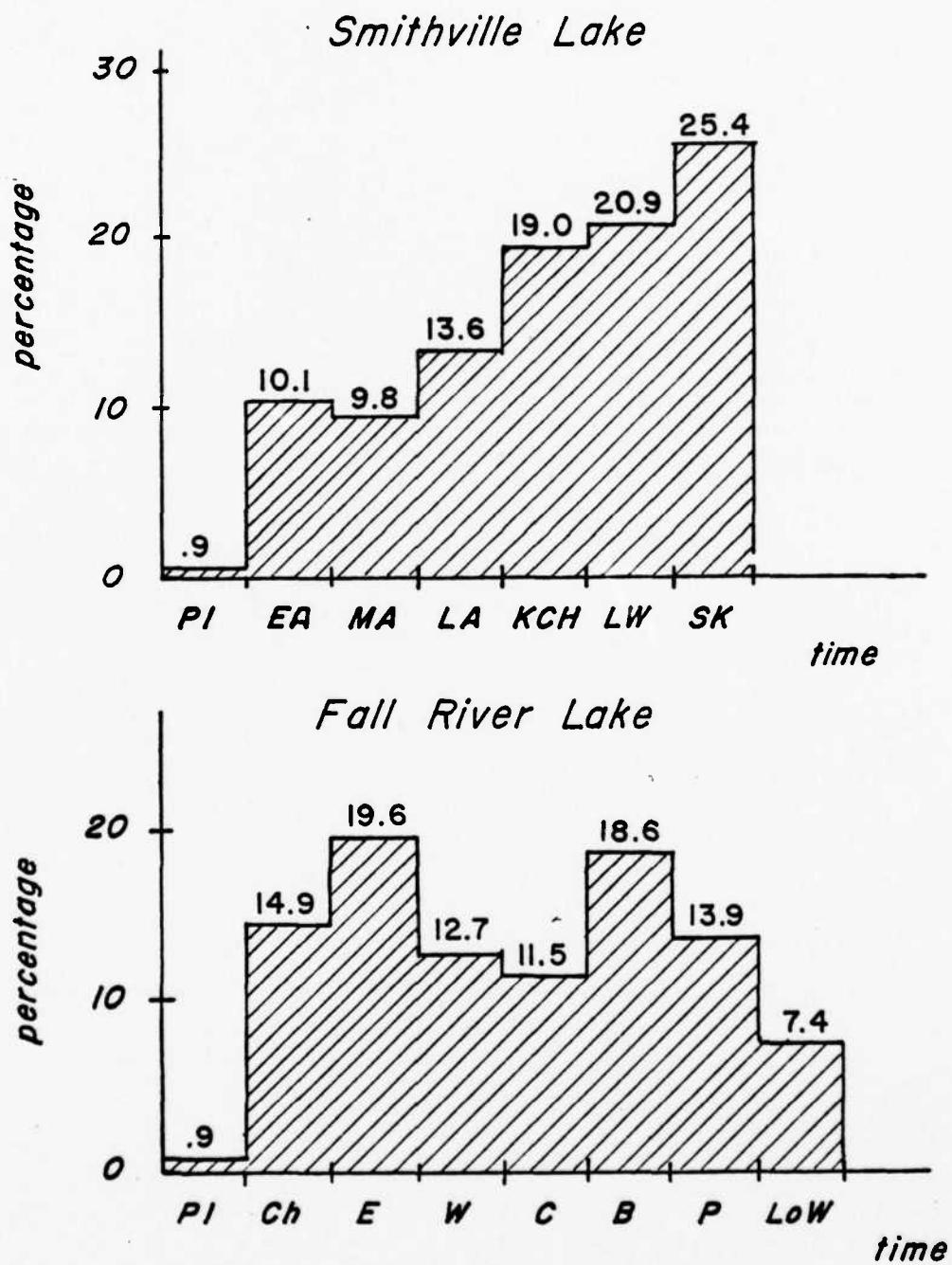


TABLE 13

Graph showing the Square-meter Habitation Areas of Smithville and Fall River Lakes (PI=Paleo-Indian, EA=Early Archaic, MA=Middle Archaic, LA= Late Archaic, KCH=Kansas City Hopewell, LW=Late Woodland, SK=Steed-Kisker, Ch=Chelsea, E=El Dorado, W=Walnut, C=Cuesta, B=Butler, P=Pomona, Low=Lower Walnut).

while Smithville had 196,207 m^2 which are adjusted upward to 236,394 m^2 to account for the 17% of that sample where site components are known but their site area is unknown. Thus, Fall River Lake has 8.39 m^2 of prehistoric habitation per acre while Smithville Lake has approximately 14.68 m^2 of habitation per acre.

The 8.39² per acre of habitation for Fall River Lake and the 14.68 m^2 per acre are revealing figures for two reasons. (1) They suggest there was a 27.2% larger (physical) occupation in Smithville Lake than in Fall River Lake, and although Smithville Lake is approximately 25% larger than Fall River in total acreage, these figures are misleading in some ways. (2) For example, the valley of Fall River Lake is broad and flat, and encloses approximately 14,747 acres of floodplain (based on a planimeter reading off a 7.5 minute topo map). The valley in Smithville Lake is narrow enclosing only 5,375 acres of floodplain. The rest of the acreage of the lake is in bluff slope or bluff top land, and for Fall River Lake this would involve only 251 acres while Smithville Lake would have 14,799 acres outside the valley floor lands. This profound difference is probably more related to changes in land use planning by the Corps of Engineers from 1947 to 1975 wherein more land was purchased for parks and recreation, but some of this difference has to do with Indian land use and land potential for human habitation. This is especially important if we remember the bluff slopes in the Smithville area were covered with an oak-hickory forest.

If we use the revised land figures and we examine the two sets of floodplain lands we find the following for known archaeological components. We have 102,368 m^2 of habitation in the Fall River area

with its 14,747 acres of valley floor land for a ratio of 6.94 m^2 of habitation per acre. At Smithville we have $240,101 \text{ m}^2$ (adjusted to include the 13 sites with known the cultural affiliation which lack areal data; we used an average of $5,335.59 \text{ m}^2$ per site based on known sites) of habitation within 5,375 acres of valley flood land for a ratio of 44.67 m^2 of habitation per acre. This figure, 6.94 m^2 vs. 44.67 m^2 , dramatically reveals the occupational difference between the two environmental settings. Clearly Fall River Lake has different occupation than does Smithville Lake.

These data suggest that more valley flood land is needed to support human populations in Fall River than in Smithville. Very likely two conditions are responsible for this: (1) the extreme richness of the oak-hickory forests which dominate Smithville and the Lower Missouri River valley and which line the valley slopes and supplants those of the valley floor, in contrast to the cross-timber forest of Fall River which was located within the valley floor. These resources for the general Kansas City area where Smithville is located have (a) turtle, fish and mollusca available from the river and streams, (b) waterfowl and jackrabbit from the floodplain prairie, (c) raccoon, opossum, squirrel, nuts, berries and cambrium from the floodplain forests, (d) deer, skunk, raccoon, squirrel, tubers, nuts, berries, roots and cambrium from the slope-upland forest, and (e) bison, elk, jackrabbit, prairie chicken, tubers, nuts and berries from the upland prairie (see Brown and Baumler 1976:40). The Fall River area would basically lack the resources of the slope-upland forest. (2) Probably too, there

was a greater impact on the Fall River area of the climatic fluctuations documented by Bryson, Baerreis and Wendland (1970). Only excavations involving sites covering the whole span of the human occupation of Fall River, and focusing upon reconstructions of the environment and on subsistence practices, can establish the validity of these suppositions. Until that is done the excavational data from Smithville Lake and the Kansas City area more generally, cannot be utilized effectively.

Finally, one last point should be made on Fall River's occupation. The dominant Early Ceramic complex is the Butler phase with Cuesta phase sites appearing only five times. This lack of a substantial Cuesta population may point to this area being a northern boundary or at least a peripheral area for this cultural system unit which is related to the Cooper focus Hopewellian materials northeastern Oklahoma. This may also be true at the end of the occupation in Late Ceramic times when we find only two Great Bend sites. This suggesting Fall River may be an area of the easternmost spread of proto-historic Wichita Indian culture. Significantly, Smithville Lake and the Kansas City area is devoid of people at this time (after A.D. 1250) suggesting the area was a no-man's land between Plains groups in Kansas and those tribes further east in Missouri.

It should be apparent to the reader that a great deal of work needs to be done on the prehistory of the Fall River Lake area.

X

EVALUATIONS AND RECOMMENDATIONS

Fall River Lake has 86 perhistoric archaeological sites covering almost the complete human occupation of the United States. One of these, 14GR314 the Two Duck Site, is listed on the National Register of Historic Places. It also has 75 historic archaeological sites which directly reflect the Euro-American occupation of the region. Additionally, in relation to the American occupation, there are still standing and in use, a variety of bridging structures constructed as early as the turn of the 20th century. Each of these specific classes of cultural resources are significant in different ways, and we will deal with them in order.

PREHISTORIC SITES:

Althouth we understand the basic outline of the prehistoric culture history of southeastern Kansas, and Kansas more generally, no significant work (before this survey) has been done on Fall River proper. Indeed, the only significant excavations in the whole of Greenwood county were at the Curry (14GR301) site, and sites 14GR306 and 14GR307 (see Calabrese 1967), and at sites 14GR210 and 14GR216 in Toronto Lake (see Howard 1964). Thus, practically speaking we have no excavational data base to give us insights into the prehistoric use of Fall River.

For these reasons we suggest the following data would be highly significant, as would be sites that could potentially yield it.

- (1) we have little data on the Paleo-Indian occupation of Kansas so any site with a potential to yield such data would be highly significant.

- (2) while we have a growing body of data (especially on subsistence) on the Archaic occupation of Kansas from the El Dorado area west of Fall River, from the Council Grove and Tuttle Creek areas northwest and north of Fall River, and from the Kansas City area to the northeast, we have no comparable data from southeastern Kansas, especially the most southeastern corner. Any sites with a potential for yielding this data, especially on subsistence, would be highly significant.
- (3) the Early Ceramic period is also (relatively speaking) poorly known in the region. The Cuesta phase with its Hopewellian traits has had its settlement pattern and village structure partially defined along with its basic artifact assemblage in Elk City Lake to the southeast of Fall River. Unfortunately we have no good data on the subsistence system of these people. The Butler (Greenwood) phase has not been completely defined but we have data on the artifact assemblage, on burial practices, and on parts of the subsistence and settlement system. In spite of that we need more data on all these areas but especially subsistence. Thus, subsistence data would be a goal for this period too.
- (4) the Pomona phase of the Middle Ceramic has data on domestic structures, tool assemblages, and some settlement information. Since we have an accurate survey of over 14,000 acres we should be able to focus on understanding aspects of settlement pattern and as with all our complexes subsistence (especially by using flotation techniques) patterns. Of special interest would be the strategies of utilization of wild and domestic foods for these farming people.
- (5) finally, since the basic assemblage of artifacts is known for Great Bend sites as are various domestic and ceremonial structures, probably the most pressing need would be to understand the nature of the subsistence strategy of these highly agricultural peoples. This would be especially the case for populations greatly removed from the centers of cultural power which were to the west around Wichita. The two sites in Fall River would seem to have that potential.

While the above comments are in no way a definitive statement of crucial research foci for the area (what is an interesting and important research problem is still a very personal thing), they do reflect obvious gaps in our knowledge. They also reflect the considerations used to determine which sites in the lake should be recommended to be placed upon the National Register of Historic Places.

For data on the Paleo-Indian occupation two sites would seem to be important: 14GR618 and 14GR671. Site 14GR618, the French site had a Hell Gap point recovered from it as well as materials from the Chelsea, El Dorado and Walnut phases of the Archaic. The site covers 1800 sq. meters and has quite a dense scatter of debris. Site 14GR671 is also a multi-component type. The Paleo-Indian complex is represented by a Dalton point while Munkers Creek materials point to an El Dorado phase manifestation. The site covers 1200 sq. meters and has a moderate scatter.

Hell Gap Paleo-Indian is best known from the Casper site in Wyoming while Dalton remains are best known from Arkansas. Importantly, these two manifestations in this part of Kansas suggests the area may have been a transitional zone between the hunters of the High Plains and the more forest efficient orientation of the eastern U.S. For these reasons these sites are deemed the most important ones for the Paleo-Indian period in the reservoir and should be placed upon the National Register of Historic Places.

The Archaic period is represented by a number of sites including the first mentioned 14GR618 and 14GR671. This period is also represented at the most important and most endangered multi-component site in the lake: 14GR630. Site 14GR630 because of its size (200 x 100 meters), and the fact that large quantities of materials were recovered (3 boxes of diagnostict materials) marked it as a key site. The site has Archaic Walnut, Munkers Creek and El Dorado materials as well as Butler, Pomona and Lower Walnut (Great Bend) remains. Additionally, a brief test of the site revealed that while it is extensively endangered by

erosion (it has been damaged already) and much surface material has been cut away, there is a midden of 30 cm (10 cm of it below the plow zone) in which the potential for hearths and storage pits is very great. These features offer an opportunity to recover faunal and especially, floral remains which are key to understanding the subsistence strategies of all these complexes. This is data we need on every cultural period in southeastern Kansas because of the limited use of flotation methods in the past, and/or because those methods had not been developed when much of the excavations in the area had been performed. Site 14GR630 is significant because of its potential to yield such data, and for that reason should be placed upon the National Register of Historic Places.

For the Early Ceramic period it is suggested that sites 14GR630 (just discussed) and 14GR657 are significant, and have the potential for yielding important subsistence data. The Butler phase component at 14GR630 with its potential for subsurface features is obvious.

The Cuesta phase though is different. One site, 14GR314--the Two Duck is on the National Register of Historic Places. The site's size and location--near Fall River proper--conforms to Cuesta village sites in other reservoirs as does site 14GR313 near the damface at Fall River. Thus, one important Cuesta phase village in the lake is already on the National Register. For this reason it is suggested that one of the Cuesta sites on a small tributary maybe more significant.

We basically know little of the subsistence patterns of these Hopewellian related people. Since Kansas City Hopewellians have a

pattern of villages with ancillary limited, specialized activity sites distributed up the smaller drainages, it would be important to see if the Cuesta people had that same pattern. This is especially so because the Yeo site (23CL199) in Smithville Lake on Camp Branch was a hickory nut collecting/storage site with evidence of domesticated marsh elder (Iva annua var. macrocarpa). Site 14GR657 is a small Cuesta site on the upper end of Otter Creek, a setting similar to that of the Yeo site, and it might have the potential to yield imformation on how Cuesta people used the areas marginal to the river. For this reason it is suggested side 14GR657 be placed upon the National Register of Historic Places.

The Middle Ceramic thru the Pomona phase is represented at a number of sites in the lake. Although Witty (1967:2) suggests large villages maybe part of these peoples settlement pattern none have been worked upon nor are the sizes of the excavated sites indicated. For this reason and because subsistence data is also needed for this complex two sites are recommended to be placed on the National Register of Historic Places. They are 14GR621 and 14GR664.

These sites are thought important for the following reasons. First, these two sites are single component types. Since there are at least 12 Pomona component sites but most are mult' component types it was felt we could learn the most from single component ones. Second, and most interestingly they represent two different site sizes and locations. 14GR664 is located near the upper reaches of Otter Creek while 14GR621 is located on the valley floor near Fall River proper. What is most striking though is that 14GR621 covers only 1500 m² (sq. meters) while

14GR664 covers approximately 18,000 m². The size and locale differences are intriguing because in general it is believed that Pomona peoples were agriculturalists, and one would expect them to situate on good alluvial floodplain soils (which all the present day farmers use in the area). These differences are also intriguing because the contemporary Steed-Kisker population in the Smithville area have a settlement pattern of individual farmsteads with ancillary burial areas dispersed upon and down the drainage at 1 mile to 3 mile intervals. These farmsteads also had nearby storage and food processing facilities. How similar or different the Pomona pattern only a few hundred miles away would be to the Steed-Kisker one is interesting.

For all the above reasons sites 14GR621 and 14GR664 should be placed upon the National Register of Historic Places.

The final prehistoric complex to be considered is the Lower Walnut focus Great Bend sites. These people are intensely agricultural and occupied the heart of the Great Bend in the Arkansas River in south-central Kansas. These proto-historic Wichita Indians apparently marginally occupied southeastern Kansas, and practically speaking little is known of their use of that area. For that reason the excavation of any site in the area would be significant. Additionally, since they were intense agriculturalists their use of marginal environments like the Fall River area would be intriguing to understand. Were more wild resources used than domestic ones in these zones? How was the periphery used in general, were there small villages or simply farmsteads?

The potential to answer some of these questions would seem possible at site 14GR630 discussed earlier. Thus, because of all its components and its potential for subsurface features it is important and should be placed on the National Register of Historic Places.

For the prehistoric occupation of Fall River Lake six sites have potential significance to answer important questions on the prehistory of the lake and should be placed on the National Register of Historic Places: 14GR618, 14GR621, 14GR630, 14GR657, 14GR664, and 14GR671.

HISTORIC SITES:

As mentioned 75 historic archeological sites are present in Fall River Lake. They include the town of Twin Falls, numerous farmsteads, abandoned railroad lines, etc. Since these sites were only abandoned and therefore created as sites in 1947, making them only 33 years old (as archeological sites) none of them are eligible to be placed upon the National Register of Historic Places because they are not 50 years old or older.

While they are not old enough to be placed on the National Register today that does not mean they lack the potential for significance in the future. All these sites were recorded because in 21st century and beyond, they will be the data base to study rural 19th and 20th century America. Very probably it would be most wise to re-evaluate these sites after 1997 to determine which, if any, should be placed on the National Register at that time.

Discussion of Archeological Sites

Because archeological sites lay within the ground they are endangered in special ways within a reservoir thru natural and human processes.

The natural processes directly associated with the lake are erosion and deposition. Erosion involves the cutting away of cultural resources through wave action and flooding. Wave action at the permanent pool level is not a problem because no archaeological sites are present along the whole shoreline of the lake. Wave action can be a problem in the areas most subject to intermittent flooding, especially at the lower reaches of the flood pool (from the Ladd Bridge south). Over 16 prehistoric and 10 historic sites are involved.

Also associated with flooding of the lower end of the flood pool is the deposition of mud. The covering of sites with silt results in their burial which would certainly protect them but at the same time it makes it very difficult to relocate them. The prehistoric sites which are most subject to silting are sites 14GR636 to 14GR646. The historic sites most subject to silting are 14GR629-630, 14GR33-634, 14GR644-645, 14GR647, 14GR660-662, and 14GR665.

The prehistoric site most endangered by the erosional effects of flooding appears to be 14GR630 at the junction of Otter Creek on Fall River. The backup of waters at the juncture forces the Fall River to cross the field and is cutting out the site (this is illustrated in Fig. 8).

All of these sites receive, in addition to effects from natural processes, impacts from human agents. The most important of these is plowing from agricultural pursuits. Indeed, plowing impacts almost every site in the lake area. Since one cannot change the effects of past plowing on the sites, one can only make suggestions for the future.

Therefore it is proposed that the U.S. Army Corps of Engineers have a policy prohibiting deep plowing on Fall River Lake lands, both on those lands controlled by the Kansas Fish and Game Commission, and those controlled by Corps personnel directly. This policy would prevent any further destruction of all the sites. A note should be made at this point that many of the historic archaeological sites are not being plowed. The rock, stone, concrete and brick present from foundations so damages the farmers' equipment that they frequently plow around the sites.

Excluding the natural processes effecting all archaeological sites, and excluding the plowing which the historic sites are not subject to as much, only one other human agent has an important impact on all the sites and that is the "collector". An example is site 14GR313 at the base of the damface is a potentially important Cuesta phase on Fall River proper. It may be an example of a Cuesta village like site 14GR314 (near Ladd Bridge which has been placed in grass by the Kansas Fish and Game Commission, and is listed on the National Register of Historic Places) about six miles to the north. This site because of its nearness to the public use areas around the damface, should be placed in grass to prevent illegal "relic" collecting.

All the archaeological materials in the lake area belong to the citizens of the United States. The collection of prehistoric materials does occur and where the staff is aware of the law, they do discourage collecting, but one area often neglected in this realm are the historic sites. Because we have a rich documentary history of the region we tend to forget that "bottle collectors" and others equipped with metal

detectors, are looting the historic archaeological resources of the country. For this reason, all collectors should be discouraged from collecting and "potting" at all archaeological sites. The old town of Twin Falls (14GR1614) is especially a victim of this activity.

Also in relationship to the historic sites, the following require very special handling. These are sites 14GR1601 and 14GR1628. They are burial areas. 14GR1601 has two female graves in a square area in the middle of a plowed field, and 14GR1628 has a single male burial "J.P. Stone" in a pasture. These burials surely fall under the special domain of established U.S. Army Corps of Engineer policies on the treatment of grave sites.

HISTORIC BRIDGING:

A variety of bridging devices have been discussed in section VII. Since most of these devices like the historic archeological sites are too young to be eligible to be placed on the National Register they are included in this report for the sake of being thorough in recording cultural resources. There is however one class of bridge which potentially meets National Register of Historic Places age criteria: they are the steel truss bridges. Five of them are present in the lake: Ladd, Otter Creek, Brown, Homer/Honey Creek, and Fall River. They were constructed beginning before 1900 and ending around 1911. Thus, they are minimally 69 years of age.

Each bridge is structurally slightly different from the others, especially in footing construction. Each bridge has an aesthetic harmony with its own structural parts and with its environmental setting.

Each bridge by its subtle differences in design reflects a slow evolution of design change within a single structural theme over a short (25 years or less) period of time. For all these reasons they should be preserved by some means.

These structures are impacted in two ways, one natural and one human. Flooding effects the bridging by washing debris, etc. against them. In the case of the steel truss bridges they are sometimes removed from their footings by the floodwaters. The human agent is the vehicle traffic using the lake roads and occasionally striking the bridges and culverts. Many of the arm railings of all the bridging structures are bent or broken.

For all the aesthetic and practical reasons it is suggested that detailed drawings of the steel truss bridges be made to document the construction methods and styles of these resources. Someday the steel truss bridges will be gone, and they represent an aspect of American rural technology at the turn of the 20th century that should not be lost!

In summary, it is recommended that sites 14GR636 to 14GR646, 14GR618, 14GR621, 14GR630, 14GR657, 14GR664 and 14GR671 all be nominated to the National Register of Historic Places. It is further suggested that some attempt should be made to document the pre-1947 bridging, especially the steel truss bridges, by collecting photographs and making detailed construction blueprints of them.

Additionally, it is suggested the Corps of Engineers prohibit deep plowing on all the lake lands, and that bottle collectors and

other "potters" of the historic sites be discouraged along with the "arrowhead collectors".

XI

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XII

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1967 The Archaeology of the Upper Verdigris Watershed. Kansas State Historical Society, Anthropology Series, No. 3.

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"Relationships Among Houses, Settlement Areas, and Population in Aboriginal California," In Settlement Archaeology, edited by K.C. Chang, pp. 79-116. National Press Books. Palo Alto.

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1968 An Archaeological Survey of the Fall River Watershed, Greenwood, Butler, and Chase counties, South-Central Kansas. Report submitted to Midwest Region, National Park Service.

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1979 "Gathering and Gardening: Trends and Consequences of Hopewell Subsistence Strategies." In Hopewell Archaeology: The Chillicothe Conference, edited by Brose and Greber, pp. 234-238. Kent State University Press.

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1974 The Casper Site. Academic Press Incorporated, New York.

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1976 Archaeological Excavations within the El Dorado Reservoir Area, Kansas. Report submitted to the National Park Service, Office of Archaeological and Historical Preservation, Denver, Colorado.

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1970 Report on the Snyder Site: An Archaic-Woodland Occupation in South Central Kansas. Masters Thesis, Department of Anthropology, University of Kansas, Lawrence.
1973 A Tentative Cultural Sequence for the Snyder Site, Kansas. Plains Anthropologist, 18: 228-238.
1977 Late Archaic Subsistence Patterns from the Central Great Plains: A Systemic Model. Unpublished Ph.D. Dissertation, Department of Anthropology, University of Kansas.

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1964 Archaeological Investigations in the Toronto Reservoir Area, Kansas. River Basin Survey Papers, No. 38, Bureau of American Ethnology, Bulletin 189, Washington.

Jennings, Jesse D.
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1979 "Kansas City Hopewell." In Hopewell Archaeology: The Chillicothe Conference, edited by Brose and Greber, pp. 86-93. Kent State University Press.

1974 "Settlement Pattern Variability in Brush Creek Valley, Platte County, Missouri." Plains Anthropologist, Vol. 19, no. 64, pp. 107-122.

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1975 "Faunal and Floral Material From a Kansas City Hopewell Site: Analysis and Interpretation." Occasional Papers, The Museum, Texas Tech University, Number 36, Lubbock.

Kuchler, A.W.
1974 "A New Vegetation Map of Kansas." Ecology, Vol. 55, no. 3, pp. 586-604.

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1972 The Archaeology of Elk City Reservoir. Kansas State Historical Society, Anthropology Series, No. 6, Topeka.

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1970 "A Preliminary Report of the Larned Site." Kansas Anthropological Association, Newsletter, Vol. 15, No. 8, pp. 1-15.

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n.d. "The Yeo Site (23CL199): A Kansas City Hopewell Limited Activity Site in Northwestern Missouri." Plains Anthropologist, IN PRESS.

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1971 The Prehistory of Delaware County, Oklahoma: Cultural Continuity and Change on the Western Ozark Periphery. Unpublished Ph.D. Dissertation, Department of Anthropology, University of Wisconsin.

Reid, Kenneth C.
1979 Nebo Hill. Report Submitted to Missouri State Highway Commission.

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1972 Archaeological Sites of the Copan District, Oklahoma and Kansas. Wichita State University Bulletin, No. 91, Wichita.

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1976 Cultural Inventory for Hillsdale Lake, Kansas. Report Submitted to Kansas City District, U.S. Army Corps of Engineers.

Rowlison, Don
1977 A Report of Archaeological Investigations at the Big Hill Lake Project, Southeastern Kansas. Kansas State Historical Society Archaeology Department. Topeka.

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1964 Archaeological Remains in the Area of Kansas City: Paleo-Indians and the Archaic Period. Missouri Archaeological Society Research Series. No. 2, Missouri.

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1955 A Theory of Culture Change. University of Illinois Press.

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1959 An Introduction to Kansas Archaeology. Bureau of American Ethnology. Bulletin No. 174.

Williston, S.W.
1902 "An Arrow-Head Found with Bone of Bison Occidentalis Lucas, in Western Kansas." American Geologist, Vol. 30, pp. 313-315.

Wilmeth, Roscoe
1970 Excavations in the Pomona Reservoir. Kansas State Historical Society Anthropology Series No. 5, Topeka.

Witty, Thomas A.

1967 The Pomona Focus. Kansas Anthropological Association Newsletter Vol. 12, No. 9, Topeka.

1969 Notes on Flint Hills Archaeology. Kansas Anthropological Association Newsletter Vol. 14, No. 18, Topeka.

Zeller, Doris E., editor

1968 The Stratigraphic Succession in Kansas. State Geological Survey of Kansas, Bulletin 189. Lawrence.

I. Vita of David Grant Elcock

II. Address: 618 Thurston
Manhattan, KS 66502

III. Birth Date: June 8, 1956

IV. Marital Status: Married

V. Education:

A. Shawnee Mission West High School Overland Park, Kansas	1970-1974
B. Purdue University Fort Wayne, Indiana	1974-1976
C. Kansas State University Manhattan, Kansas	1976-1978 Bachelor of Science in Anthropology
D. Kansas State University Currently enrolled in a Masters program in Jr. College Education with an emphasis in Anthropology.	1979-present

VI. Field Experience:

A. Archaeological Field School	Fall 1976
	Fall 1979
B. Survey and Test Excavation Iroquois Research Institute	Summer 1978
C. Principle Investigator Fall River Reservoir Project	1979
D. Osteology lab work	1976-1978
1. Analysis of human and faunal skeletal material from site 14JW303.	
2. Description and analysis of human skeletal material from 5MR30 near Brush, Colorado.	
3. Analysis of faunal material from BD75-A55 Bab edh-Dhra, Jordan.	

Osteology lab work (cont'd)

4. Preliminary analysis of faunal material from Peru, site PV-10.

E. Pedestrian site survey of Wildcat Creek between Manhattan and Keats, Kansas. Fall 1976

F. "Fall River Prehistoric Settlement Patterns" Paper read at the Annual Meeting of the Plains Conference, Kansas City, Missouri. 1979

VII. Anthropological Associations:

A. President and Co-founder of the Anthropology Club at Kansas State University. 1978

VIII. Publications:

1980a. An Archeological Survey of the Moline Water System, Elk County Rural Water District No. 1. Report on file at the Historic Preservation Office, Kansas State Historical Society, Topeka.

1980b. An Archeological Survey of the Proposed Power Line from Mingo, Kansas to the Nebraska Border. Report on file at the Historic Preservation Office, Kansas State Historical Society, Topeka.

1980c. An Archeological Survey of the Power Line Route Northeast of Oberlin, Kansas. Report on file at the Historic Preservation Office, Kansas State Historical Society, Topeka.

1980d. An Archeological Survey of the Proposed Power Line from Holcomb, Kansas to Spearville, Kansas. Report on file at the Historic Preservation Office, Kansas State Historical Society, Topeka.

I. Vita of Patricia J. O'Brien

II. Address: Department of Sociology, Anthropology and Social Work
239 Waters Hall
Kansas State University
Manhattan, KS 66506
(913) 532-6872

1902 Blue Hills Road
Manhattan, Kansas 66502
(913) 537-7864

III. Birth Date: April 1, 1935 in Chicago, Illinois

IV. Marital Status: Married to Angelo C. Garzio

V. Education:

- A. Nicholas Senn High School
Chicago, Illinois 1949-1953
- B. Wright Junior College
Chicago, Illinois 1954-1960
Associate of Arts
- C. University of Illinois
Urbana, Illinois 1960-1962
Bachelor of Arts
- D. University of Illinois
Urbana, Illinois 1962-1969
Ph.D. in Anthropology

VI. Non-academic Employment:

- A. Illinois Bell Telephone Company
Plant Engineering Clerk
Evanston, Illinois 1953-1960

VII. Teaching Experience:

- A. University of Illinois
Graduate Teaching Assistant 1963-1966
- B. Florida Atlantic University
Interim Instructor 1966-1967
- C. Kansas State University
Assistant Professor 1967-1972
Associate Professor 1972-1978
Professor 1978-present

VIII. Research Positions:

- A. University of Illinois
Research Assistant to Charles J. Bareis
on the Cahokia Project 1962-1963
- B. University of Illinois
Research Assistant to Dr. Elaine A. Bluhm on
the Rock River and John Deere projects 1963-1964
- C. University of Illinois
Research Assistant to Dr. John C. McGregor
on a syllabus of Introductory Physical
Anthropology and Archaeology Summer, 1965

IX. Professional Organizations:

The Society for American Archaeology The American Anthropological Association, Fellow The Society of Sigma XI American Association for the Advancement of Science Current Anthropology, Associate Arkansas Archaeological Society Iowas Archaeological Society Kansas Archaeological Society Kansas Academy of Science Missouri Archaeological Society Texas Archaeological Society Wisconsin Archaeological Society New Zealand Archaeological Association

X. Research Interests:

Artifact classification and analysis (especially ceramics); Middle Mississippian, Middle Woodland and Central Plains archaeology; the engineering and building technology of the Maya; the origin and spread of domesticated plants; and cultural classification (Steward's culture types) especially with reference to archaeological materials.

XI. Courses Taught:

Introduction to Archaeology
Introduction to Physical Anthropology
Archaeology of North America
Archaeology of Mexico and Guatemala
Archaeology of the Old World
Archaeological Field Methods
Indians of North America
Indians of South America
Kansas Archaeology

XII. Field Work in Archaeology:

- A. University of Illinois Summer, 1964
Field Foreman for Dr. Elaine A. Bluhm
University of Illinois Archaeological Field School
- B. University of Kansas Summer, 1968
Co-director of Great Plains Archaeological
Field School jointly sponsored by KU, KSU and
Wichita State with support from NSF. Excavated
Taylor Mound (14DP3).
- C. Kansas State University Summer, 1969
Co-director of Great Plains Archaeological
Field School sponsored by KU and KSU. Excavated
Steed-Kisker (23PL13) and Young (23PL4) sites.
- D. Kansas State University Fall, 1969
Completed excavations at the Griffing (14RY401)
site, A Smoky Hill earthlodge near Manhattan, KS
- E. Kansas State University Summer, 1970
Co-director of Midwestern Archaeological Field
School sponsored by KU, KSU, and University of
Missouri. Excavated sites 23SA115, 23SA162,
and 23SA162W.
- F. Kansas State University Fall, 1970
Excavated the Don Wells (14RY404) site near
Manhattan, KS and tested the Elliott (14GE303)
site south of town.
- G. Kansas State University Summer, 1971
Co-director of Kansas Archaeological Field
School sponsored by KU and KSU. Excavated the
Young (23PL4), White (23PL80), Coons (23PL16) sites
and the Cochran Mound (23PL86).
- H. Kansas State University Fall, 1971
Excavated further at the Elliott (14GE303) site
and also excavated at the Coffey (14P01) site,
around Manhattan.
- I. Kansas State University Summer, 1972
Director of Kansas Archaeological Field School
sponsored by KU and KSU. Excavated the Young
(23PL4) site.
- J. Kansas State University Summer, 1973
Co-director of Kansas Archaeological Field
School sponsored by KU and KSU. Excavated the
Cogan Mounds (23PL125).

XII. Field Work in Archaeology (Cont'd.)	160
K. Kansas State University Excavated the Witt (14GE600) site, a Smoky Hill earthlodge near Junction City.	Fall, 1973 Spring, 1974
L. Kansas State University Director of Kansas Archaeological Field School sponsored by KU and KSU. Excavated the Nuttle (14BU14) and Holderman (14BU19) sites near El Dorado.	Summer, 1974
M. Kansas State University Co-director of Kansas Archaeological Field School sponsored by KU and KSU. Excavated the 4 sites in Smithville Lake and directed a site survey of its Camp Branch area.	Summer, 1975
N. Kansas State University Excavated the Ashland Bottoms site (14RY603), a Late Kansas City Hopewell and a historic corn crib site south of Manhattan.	Fall, 1975
O. Kansas State University Director of Kansas Archaeological Field School sponsored by KU and KSU. Excavated 3 sites in Smithville Lake and completed the site survey of the lake area.	Summer, 1976
P. Kansas State University Completed excavations in the Ashland Bottoms Site (14RY603); Tested the Eggers site (14RY609).	Fall, 1977
Q. Kansas State University Excavated the Witt Mound (14GE607) near Junction City.	Spring, 1979
R. Kansas State University Completed excavations at the Eggers site (14RY609).	Fall, 1979

XIII. Professional Recognition:

Plains editor for Current Research in American Antiquity (Society for American Archaeology). 1971-1976

XIV. Grants and Fellowships:

- A. Platte River Valley Archaeological Survey. Bureau of General Research, Kansas State University. 1969-1970: \$1200.
- B. Summer Fellowship. Bureau of General Research, Kansas State University. 1970.
- C. Platte River Valley Archaeological Survey. Bureau of General Research, Kansas State University. 1970-1971: \$950.

XIV. Grants and Fellowships (Cont'd.)

161

- D. Platte River Valley Archaeological Survey. Bureau of General Research, Kansas State University. 1971-1972: \$1,000.
- E. Platte River Valley Archaeological Survey. Bureau of General Research, Kansas State University. 1972-1973: \$700.
- F. Kansas Archaeology. Bureau of General Research, Kansas State University. 1973-1974: \$700.
- G. Kansas Archaeology. Bureau of General Research, Kansas State University. 1974-1975: \$400.
- H. Cahokia Archaeology. Bureau of General Research, Kansas State University. 1975-1976: \$1500.
- I. Cahokia Archaeology. Bureau of General Research, Kansas State University. 1977-1978: \$1500.
- J. Kansas Archaeology. Bureau of General Research, Kansas State University. 1978-1979: \$300.
- K. Kansas Archaeology. Bureau of General Research, Kansas State University. 19791980. \$900.

XV. Contracts:

- A. Smithville Lake, 1975-1976. U.S. Army Corps. of Engineers, \$19,000.
- B. Milford Lake Shoreline Survey, 1975-1976. National Park Service, \$5,000.
- C. Smithville Lake, 1976-1977. U.S. Army Corps. of Engineers, \$101,000.
- D. Wilson-Milford Lake Cultural Resource Management Plans, 1977-1978. U.S. Army Corps. of Engineers, \$6,200.
- E. Milford Lake: 14GE41 Test Excavations. 1977-1978. U.S. Army Corps of Engineers, \$7,000.
- F. Preliminary Archeological Literature Search. Western Portion Kansas River and Tributaries Bank Stabilization Study Kansas. 1977-1978. U.S. Army Corps of Engineers, \$7,000.
- G. Fall River Cultural Resource Survey, 1979. U.S. Army Corps of Engineers, \$28,000.
- H. Milford Lake Public Areas Survey, 1979-1980. U.S. Army Corps of Engineers, \$6,000.
- I. Council Grove Cultural Resource Survey, 1980. U.S. Army Corps of Engineers, \$15,000.

XVI. Publications:

"Two Late Woodland Sites in Lake County, Illinois." Transactions of the Illinois Academy of Science, Vol. 57, No. 2, pp. 109-115, 1964.

"Doctrinaire Diffusionism and Acts of Faith." American Antiquity, Vol. 33, no. 3, pp. 386-388, 1968.

"A Mastodon (?) Tusk from Manhattan, Kansas." Transactions of the Kansas Academy of Science, Vol. 71, no. 1, pp. 90-91, 1968.

"Chronological Position of the Cambered Jar at Cahokia and Its Implications." American Antiquity, Vol. 34, no. 4, pp. 411-416, 1969.

"Some Ceramic Periods and Their Implications at Cahokia." In Explorations into Cahokia Archaeology, edited by Melvin L. Fowler. Bulletin 7, Illinois Archaeological Survey, Urbana. 1969.

"Valley Focus Mortuary Practices." Plains Anthropologist, Vol. 16, no. 53, pp. 165-182, 1971.

"The Don Wells Site (14RY404), A Hopewellian Site Near Manhattan and Its Implications." Kansas Anthropological Association, Newsletter, Vol. 17, no. 5, pp. 1-11. Topeka, 1972.

"A Clovis Point from the Waterville, Kansas Area." Plains Anthropologist, Vol. 17, no. 55, pp. 60-64, 1972.

"The Sweet Potato: Its Origin and Dispersal." American Anthropologist, Vol. 74, no. 3, pp. 342-365, 1972.

"Urbanism, Cahokia and Middle Mississippian." Archaeology, Vol. 25, no. 3, pp. 188-197, 1972.

A Formal Analysis of Cahokia Ceramics from the Powell Tract.
Monograph no. 3, Illinois Archaeological Survey. Urbana, 1972.

with Kevin Hart. "The Utlaud Site (23SA162W): An Oneota-Historic Missouri Burial Site." Missouri Archaeologist. Vol. 34, nos. 1-2, 48-66, 1972.

with Clark S. Larsen. "The Cochran Mound, 23PL86, Platte County, Missouri." Missouri Archaeological Society, Newsletter, No. 267, pp. 1-5, 1973.

with Clark S. Larsen, John O'Grady, Brian O'Neill and Ann S. Stirland. "The Elliott Site (14GE303), A Preliminary Report." Plains Anthropologist, Vol. 18, no. 59, pp. 54-72, 1973.

with Pamela Hixon, Beryl Miller, Don Rowlison, Paul Tribble, David Vitt and J. Pat Young, "A Most Preliminary Report of the Coffey Site, 14P01: A Plains Archaic Site in Pottawatomie County." Kansas Anthropological Association, Newsletter, Vol. 18, no. 5, pp. 1-38, 1973.

XVI. Publications (Cont'd.)

Archaeological Excavation Smithville Lake Project. Report submitted to the U.S. Army Corps of Engineers, Kansas City District. 1975.

Milford Lake Shoreline Archaeological Survey. Report submitted to the National Park Service, Midwest Archaeological Center. 1976.

Archaeological Survey Smithville Lake Project. Report submitted to the U.S. Army Corps. of Engineers, Kansas City District. 1976.

Cultural Resources Survey of Smithville Lake, Missouri, Volume 1: Archaeology. Report submitted to the U.S. Army Corps. of Engineers, Kansas City District, 1977.

"Steed-Kisker: A Western Mississippian Settlement System." In Mississippian Settlement Patterns, edited by Bruce D. Smith, pp. 1-19, Academic Press, 1978.

"Steed-Kisker and Mississippian Influences on the Central Plains" in George Metcalf Festschrift on Central Plains Archaeology, edited by Donald Blakeslee, pp. 67-80, Office of Iowa State Archaeologist, Report No. 11, 1978.

Milford Lake, A Cultural Resources Management Plan. U.S. Army Corps of Engineers, Kansas City District. 1978.

"A Mastodon from Stanton County, Kansas." Transactions of the Kansas Academy of Science, Vol. 81, No. 4, pp. 371-373, 1978.

with Margaret Caldwell, John Jilka, Lynn Toburen and Barbara Yeo. "The Ashland Bottoms Site (14RY603): A Kansas City Hopewell Site in North-Central Kansas." Plains Anthropologist, Vol. 24, no. 83, pp. 1-20, 1979.

Preliminary Archaeological Literature Search: Western Portion Kansas River and Tributaries Bank Stabilization Study Kansas. U.S. Army Corps of Engineers, Kansas City District. 1979.

IN PRESS

"A Preliminary Review of Steed-Kisker Culture." Wichita State University, Bulletin.

with Elaine Bluhm Herold. "The Huber Site (CK-1), Cook County, Illinois." in Bulletin of the Illinois Archaeological Survey, Urbana.

with Elaine Bluhm Herold. "The Hoxie Farm Site (CK-4), Cook County, Illinois." in Bulletin of the Illinois Archaeological Survey, Urbana.

"The Yeo Site (23CL199): A Kansas City Hopewell Limited Activity Site in Northwestern Missouri." Plains Anthropologist.

with David G. Elcock. Cultural Resources Survey of Fall River Lake, Kansas. Reported to the U.S. Army Corps of Engineers, Tulsa District.

SUBMITTED FOR REVIEW

with Lynn J. Graham. "The Evaluation of an Astronomical Hypothesis of the "Vacant" Late Woodland Mounds Near Miami, Missouri." Missouri Archaeologist.

"Stewardian Taxonomy and American Archeological Units." Journal of the Steward Society.

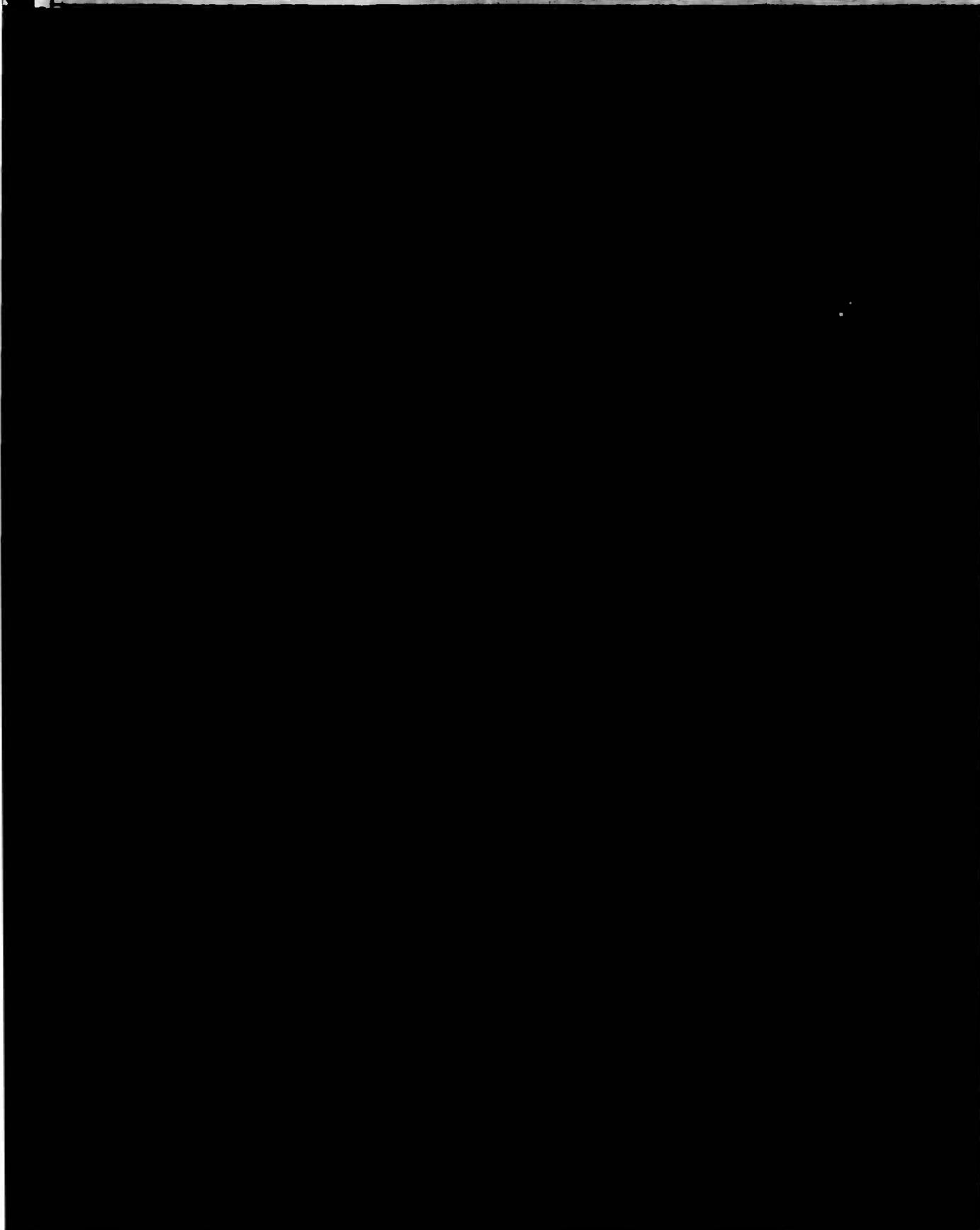
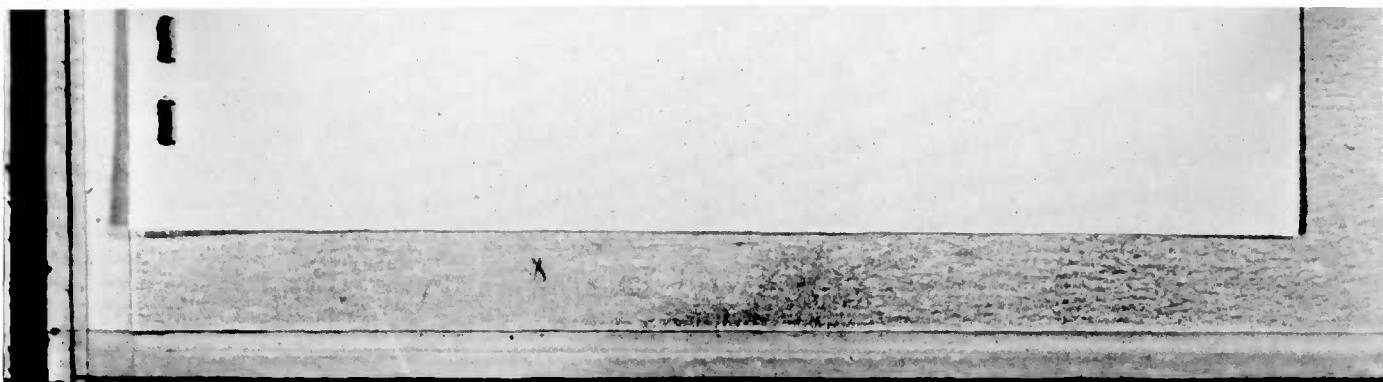
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District, U.S. Army Corps of Engineers.

n.d. "The Yeo Site (23CL199): A Kansas City Hopewell Limited Activity Site in Northwestern Missouri." Plains Anthropologist, IN PRESS.

Lucas, in Western Kansas." American Geologist, Vol.
30, pp. 313-315.

Wilmeth, Roscoe
1970 Excavations in the Pomona Reservoir. Kansas State
Historical Society Anthropology Series No. 5, Topeka.

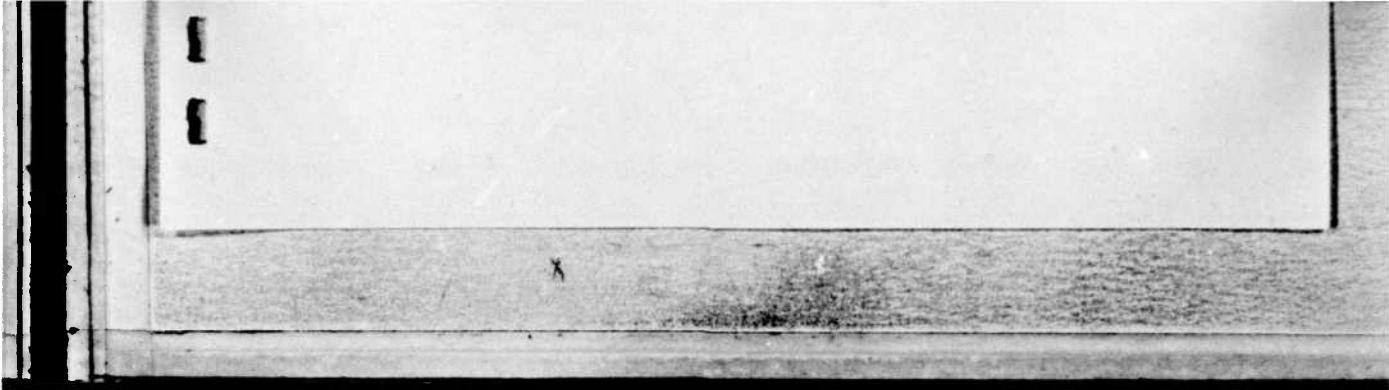


3. Analysis of faunal material from BD75-A55
Bab edh-Dhra, Jordan.



Assistant Professor
Associate Professor
Professor

1967-1972
1972-1978
1978-present



Director of Kansas Archaeological Field School
sponsored by KU and KSU. Excavated the Young
(23PL4) site.

J. Kansas State University
Co-director of Kansas Archaeological Field
School sponsored by KU and KSU. Excavated the
Cogan Mounds (23PL125).

Summer, 1973

XIV. Grants and Fellowships:

- A. Platte River Valley Archaeological Survey. Bureau of General Research, Kansas State University. 1969-1970: \$1200.
- B. Summer Fellowship. Bureau of General Research, Kansas State University. 1970.
- C. Platte River Valley Archaeological Survey. Bureau of General Research, Kansas State University. 1970-1971: \$950.

- G. Fall River Cultural Resource Survey, 1979. U.S. Army Corps of Engineers, \$28,000.
- H. Milford Lake Public Areas Survey, 1979-1980. U.S. Army Corps of Engineers, \$6,000.
- I. Council Grove Cultural Resource Survey, 1980. U.S. Army Corps of Engineers, \$15,000.

with Clark S. Larsen, John O'Grady, Brian O'Neill and Ann S. Stirland.
"The Elliott Site (14GE303), A Preliminary Report." Plains Anthropologist, Vol. 18, no. 59, pp. 54-72, 1973.

with Pamela Hixon, Beryl Miller, Don Rowlison, Paul Tribble, David Vitt and J. Pat Young, "A Most Preliminary Report of the Coffey Site, 14P01: A Plains Archaic Site in Pottawatomie County." Kansas Anthropological Association, Newsletter, Vol. 18, no. 5, pp. 1-38, 1973.

Illinois." in Bulletin of the Illinois Archaeological Survey, Urbana.

with Elaine Bluhm Herold. "The Hoxie Farm Site (CK-4), Cook County, Illinois." in Bulletin of the Illinois Archaeological Survey, Urbana.

"The Yeo Site (23CL199): A Kansas City Hopewell Limited Activity Site in Northwestern Missouri." Plains Anthropologist.

with David G. Elcock. Cultural Resources Survey of Fall River Lake, Kansas. Reported to the U.S. Army Corps of Engineers, Tulsa District.

